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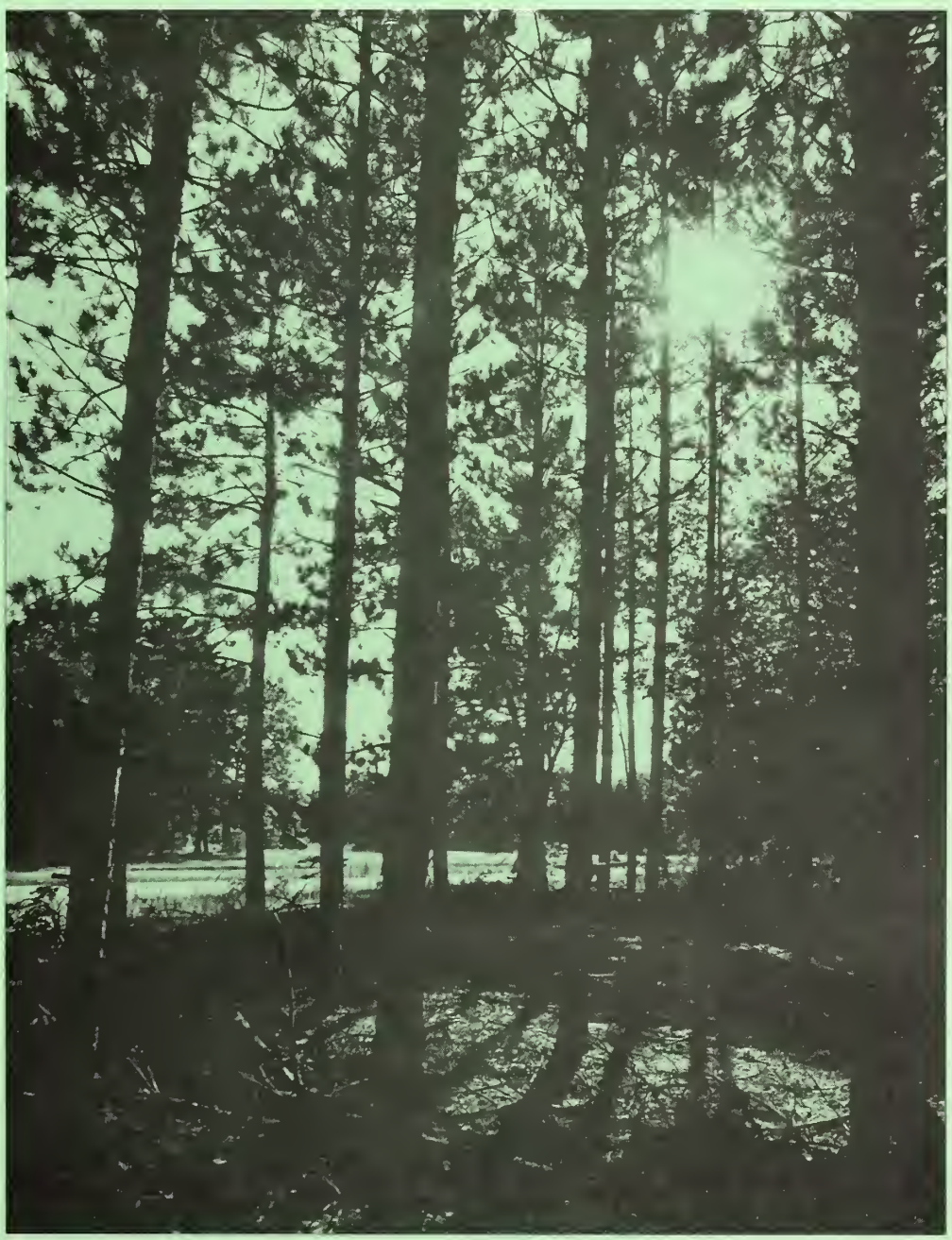
Wisconsin Timber Industry—An Assessment of Timber Product Output and Use, 1988

W. Brad Smith and James W. Whipple



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FOREWORD

In this bulletin we discuss recent Wisconsin forest industry trends and report the results of a detailed study of forest industry, industrial roundwood production, and associated primary mill wood and bark residue in Wisconsin in 1988. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, and forest industry development. Likewise, researchers need current forest industry and industrial roundwood information for planning projects.

Special thanks are given to the primary wood-using firms that supplied information for this study. Their cooperation is greatly appreciated.

All board foot data in this report have been converted to International 1/4-inch scale by applying a multiplier of 1.08 to all saw log volume reported in Scribner Decimal C scale by sawmills, a multiplier of 1.04 to all veneer log volume reported in Scribner Decimal C scale by veneer mills, a multiplier of 1.38 to all saw log volume reported in Doyle scale by sawmills, and a multiplier of 1.14 to all veneer log volume reported in Doyle scale by veneer mills.

The last published report from a detailed study of all industrial roundwood output in Wisconsin was dated 1986. Most comparisons in this report are with the 1986 study results. Quantities shown may vary slightly from one table to another because of rounding differences, but these differences are insignificant.

Wisconsin Timber Industry—An Assessment of Timber Product Output and Use, 1988

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HIGHLIGHTS

PRIMARY TIMBER INDUSTRY—INDUSTRIAL ROUNDWOOD

Pulp mills dominate Wisconsin forest industry in terms of volume of wood used; but sawmills far outnumber any other mill category. The total number of mills of all types operating in Wisconsin hit its lowest point in 20 years in 1986 with 502 mills and then increased slightly to 512 active mills by 1988. Wisconsin is divided into five Survey Units (fig. 1).

- Industrial roundwood production rose from 326.9 million cubic feet in 1986 to 328.7 million cubic feet in 1988. Annual production increases averaged 11 percent for softwoods and 2 percent for hardwoods.

- Pulpwood accounted for two-thirds of the industrial roundwood production in 1988.

- Seven species (aspen, red oak, hard maple, red pine, white birch, jack pine, and soft maple) supplied 82 percent of the total growing-stock harvest in 1988.

W. Brad Smith, Principal Mensurationist, received a B.S. degree in forestry (1975) and an M.S. degree in forest management (1977) from Purdue University. He joined the Forest Service in May 1977, and has been working with North Central's Forest Inventory and Analysis Unit since October 1977.

James W. Whipple, Wood Utilization Specialist, received his B.S. in forestry from Michigan Technological University in 1964. He joined the Wisconsin Department of Natural Resources as a Field Forester in July 1964 and has been a Utilization Specialist since 1970.

- Log and bolt receipts at active mills (excluding residential fuelwood and receipts at treating plants) were 328.7 million cubic feet. Softwood receipts rose more than 19 percent, and hardwood receipts fell 4 percent since 1986.

- Total material harvested from timberland for industrial roundwood (excluding residential fuelwood) was 468 million cubic feet. Growing stock accounted for 67 percent (313 million cubic feet) of this total.

PULPWOOD

- Wisconsin produced a record high 3.08 million cords of pulpwood (including residues) in 1988. This volume was 7 percent higher than the 1987 production of 2.87 million cords, based on the North Central Station's annual study of pulpwood production. Pulpwood comprises all fiber based products made from roundwood, including particleboard, oriented strand board (OSB), waferboard, etc.

- Aspen constituted 42 percent of the roundwood cut for pulpwood (fig. 2). Although aspen demand continues to be high, aspen's share of the Wisconsin pulpwood market remains strong but is declining in favor of jack pine, balsam fir, and other hardwood species.

- Wisconsin pulp mills procured 14 percent of their wood requirements from out-of-State. Aspen, jack pine, and spruce roundwood as well as hardwood mill residues were primary imports from the Lakes States Region. Softwood mill residues from Western States were also an important resource.

Figure 1.—*Forest Survey Units in Wisconsin.*

- About 4 out of 5 cords of Wisconsin pulpwood cut in 1988 remained in the State. Two-thirds of the exports went to Michigan, and the remainder went to Minnesota. Principal exports were aspen, white birch, hard maple, hemlock, soft maple, and balsam fir.

- Annual production of aspen, the leading pulpwood species, has more than doubled during the last 30 years.

SAW LOGS

- Loggers delivered 576 million board feet of saw logs to saw mills in 1988, up 66 million board feet from 1986. Thirty percent was red oak.

- Principal saw log species were red oak, aspen, hard maple, white oak, and white pine. Aspen saw log production has increased 24 percent since 1986.

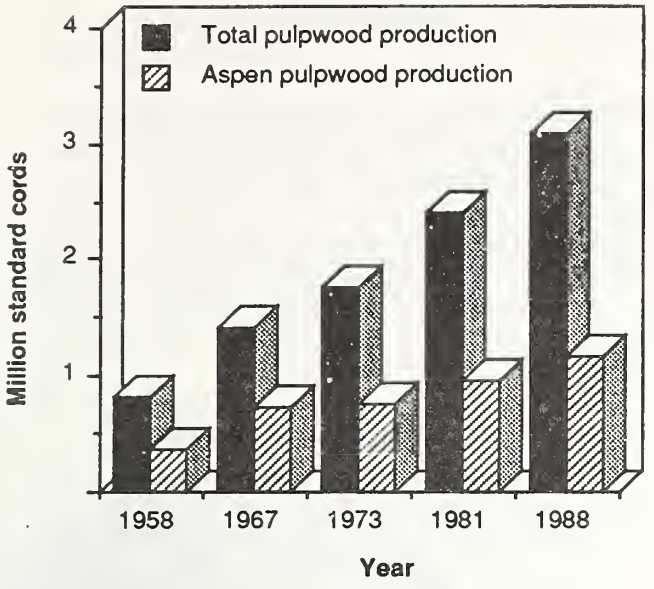

Figure 2.—*Pulpwood production of aspen and all species in Wisconsin for selected years.*

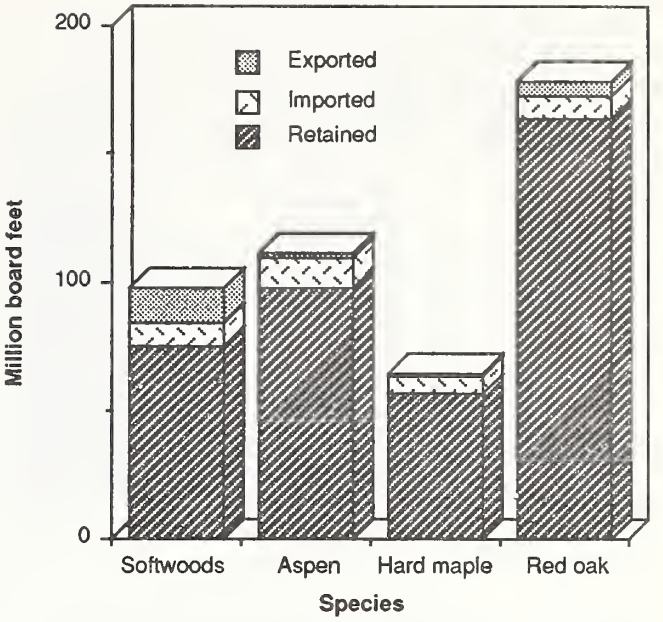

Figure 3.—*Saw log production exported (mills outside Wisconsin), imported, and retained by select species in Wisconsin, 1988.*

- Four percent of the saw log volume—primarily pine, aspen, and hard maple—was shipped to Michigan and Minnesota.

- Major production gains since 1986 were in aspen (22 million board feet), white pine (10 million board feet), and red oak (9 million board feet). Hemlock, red pine, ash, white oak, jack pine, and soft maple all showed production gains of more than 4 million board feet. Major declines since 1986 were in elm and hard maple.

- Leading saw log producing counties (with more than 20 million board feet each) were Forest, Oconto, Oneida, and Chippewa. Twenty-one other counties each cut more than 10 million board feet.

- In 1988, 461 active (operating) sawmills received 591 million board feet of saw logs; in 1986, 457 sawmills received 510 million board feet.

- Wisconsin imported a total of 45 million board feet of saw logs from Michigan, Minnesota, Iowa, and Illinois. Major import species were aspen, red oak, and pine (fig. 3).

VENEER LOGS

- Loggers delivered 42.7 million board feet of veneer logs to veneer mills, 63 percent more than in 1986.

- Of the 42.7 million board feet of veneer logs cut in 1988 in Wisconsin, 60 percent remained in the State, 39 percent was shipped to Michigan, and the remainder was sent to Indiana or exported to other States or Canada (fig. 4).

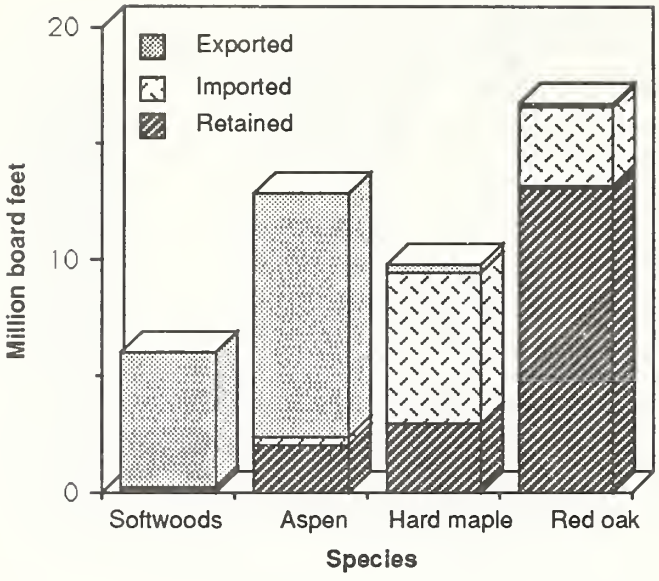

Figure 4.—*Veneer production exported (mills outside Wisconsin), imported and retained by select species in Wisconsin, 1988.*

- Red oak was the primary veneer species cut in Wisconsin, followed by pine, basswood, hard maple, aspen, white oak, and soft maple. Aspen and pine were the chief exports from Wisconsin to other States or Canada.

OTHER PRODUCTS

- Other industrial roundwood products totalling 4.3 million cubic feet (1 percent of all industrial roundwood) were cut in Wisconsin in 1988. These products include commercial posts, industrial fuelwood, shaving bolts, excelsior bolts, etc.

- Commercial posts (919 thousand pieces) constituted 22 percent of the "other" products; red pine was the leading post species. Seventy-four percent of the posts were cut in the Northwest Unit.

Residential fuelwood is a major nonindustrial product in Wisconsin. The results of a residential fuelwood study conducted in 1981 are available in a separate Station publication.

TIMBER REMOVALS

- Timber removals from growing stock on timberland for industrial roundwood was 312.5 million cubic feet in 1988.

- Total removals of all material for roundwood from timberland was 468.3 million cubic feet. Twenty-nine percent (135.7 million cubic feet) of this total was left in the woods as logging residue (fig. 5).

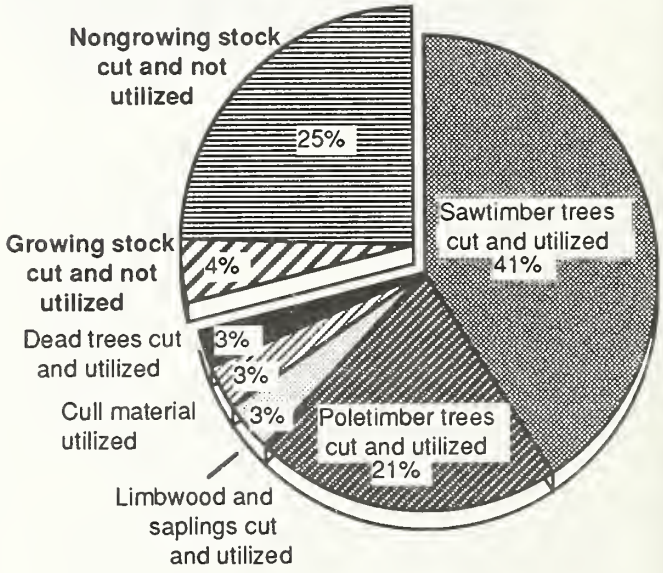

Figure 5.—*Distribution of material harvested from timberland for industrial roundwood in Wisconsin, 1988.*

- Major species harvested in both growing stock and sawtimber were red oak, aspen, red pine, and maple.

LOGGING RESIDUE

- During 1988, loggers in Wisconsin generated an estimated 136.7 million cubic feet of logging residue. Logging residue includes all wood fiber left behind from trees cut or killed during logging operations and not subsequently used.

- Aspen and red oak account for 50 percent of all logging residues.
- Seven counties—Forest, Lincoln, Marinette, Oneida, Vilas, Bayfield, and Sawyer—each produced more than 5 million cubic feet of logging residue. All counties in northern and central Wisconsin (Northeast, Northwest, and Central Survey Units) except Eau Claire and Marquette had more than 1 million cubic feet of residues.

PRIMARY MILL RESIDUE

- Ninety-seven percent or more of each residue class (coarse, fine, bark) generated at Wisconsin primary mills was used.
- During 1988, Wisconsin primary wood-using mills (except the pulp, particleboard, and waferboard mills) generated 825 thousand green tons of coarse residue, 514 thousand green tons of fine residue, and 367 thousand green tons of bark.
- Pulp mills consumed 68 percent of the coarse residue for fiber products, and industry and households consumed 26 percent for fuel.
- Fine residue and bark were used primarily for industrial fuel, soil conditioners, mulch, livestock bedding, and poultry litter.

APPENDIX

STUDY METHODS

Data for this publication came from responses to a mail questionnaire (see following pages) sent to all known veneer mills, specialty mills (poles, piling, etc.), and all Wisconsin primary saw mills that processed more than one million board feet of logs and bolts in 1988. Sawmills processing less than one million board feet were contacted to verify ongoing operations, and data from a 1986 study were used for these mills to reduce the data collection workload. The latter mills constituted less than 10 percent of the total production, but re-using the data reduced the workload by approximately 40 percent. The impact of this procedure on sampling error is considered negligible.

The study was a cooperative effort of the Wisconsin Department of Natural Resources (WDNR) and the North Central Forest Experiment Station (NCFES). All canvassing in Wisconsin was done by the WDNR, using mail and personal contacts; followup of nonrespondents was by mail, telephone, and personal contacts. WDNR utilization and marketing specialists provided estimates based on prior knowledge and contacts for a few Wisconsin mills that did not furnish complete data.

The NCFES mailed a questionnaire to all pulp mills and all out-of-State mills using Wisconsin roundwood. Followup of nonrespondents was by mail and telephone.

Logging utilization factors were used to estimate the logging residue. These factors were determined from earlier Wisconsin logging studies by the NCFES.

The NCFES edited and compiled the data.

Form Approved
OMB No. 0596-0010

LOGS AND OTHER WOOD PROCESSED IN 1988

WISCONSIN

This form is for reporting the quantities and kinds of logs and other wood processed by this plant in 1988, and the disposition of the wood residues resulting from this operation.

All replies will be held confidential and used only for statistical reports.

☐ Check here if you wish to receive a copy of the report resulting from this study.

Plant or company name: _____

Mailing address: _____

Plant location: _____

Person to contact about this report: _____

Types of wood processed in 1988. *Check only one kind of product. If more than one kind was received, fill out a separate form for each.*

14-15

01	☐	Saw logs & bolts-- includes veneer logs sawn
02	☐	Veneer logs & bolts cut into veneer
03	☐	Cooperage logs and bolts
06	☐	Piling
07	☐	Poles

09	☐	Industrial fuelwood
10	☐	Posts
11	☐	Charcoal wood
12	☐	Other (specify) _____

☐ Check here if no wood was processed in 1988 and return the form.

Total volume of above-checked product that was processed in 1988.

Conifer (pine, cedar, etc.) _____ (27-36) Hardwood (includes cottonwood) _____ (37-46)

DO NOT WRITE IN THIS BLOCK

Cols. 1-5 = 61100

MILL	STATE	COUNTY
XXX	XX	XXX
6-8	9-10	11-13

FACTOR
XXX
47-49

50

A self-addressed envelope is provided for your convenience.

This survey is authorized by PL 93-378 as amended by PL 94-588. Your cooperation is appreciated and needed to make the results of this survey comprehensive, accurate, and timely, although you are not required to respond.

LOGS and OTHER WOOD PROCESSED IN 1988.

Do not include logs or bolts sold or transferred to other companies. Enter quantity processed opposite species in appropriate columns showing survey units, other states and Canada where the logs and bolts were harvested. The State map on page 4 shows unit boundaries. If the unit of measure is board feet, indicate the log rule or lumber tally. ☐ Doyle ☐ International ☐ Scribner ☐ Lumber tally
If cords, specify size _____. If weight, specify pounds per thousand board feet _____ or pounds per cord _____.

Cols. 1-5 = 612xx or 613xx

Species	Unit of measure: Board feet ☐ Cords ☐ Cubic feet ☐ Lineal feet ☐ Pieces ☐ Weight ☐ Other ☐ _____		FROM WISCONSIN (enter name of county immediately below)								OTHER STATES AND CANADA (enter name below)	
			XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
Cedar	1											
Balsam fir	2											
Hemlock	3											
Jack pine	4											
Red pine	5											
White pine	6											
Spruce	7											
Tamarack	8											
Ash	9											
Aspen	10											
Balsam poplar	11											
Basswood	12											
Beech	13											
White birch	14											
Yellow birch	15											
Cottonwood	16											
Elm	17											
Hickory	18											
Hard maple	19											
Soft maple	20											
Red oak	21											
White oak	22											
Walnut	23											
Other (specify)	24											
TOTAL												

DISPOSAL OF PLANT RESIDUES IN 1988 BY TYPE AND USE, for product checked on page 1

Instructions: Please enter your best estimate of the **percentage of each type of plant residue** that was used for the various purposes indicated

Cols. 1-5 = 615xx

DISPOSAL OF RESIDUE	BARK		COARSE RESIDUES (Suitable for chipping such as slabs, edgings, etc.)		FINE RESIDUES (Sawdust, veneer, clippings, etc. not suitable for chipping)	
	1 Conifer	2 Hardwood	3 Conifer	4 Hardwood	5 Conifer	6 Hardwood
	x x	x x	x x	x x	x x	x x
1. USED FOR:						
a. Manufacture of fiber products such as pulp, hardboard, or roofing felt 1	%	%	%	%	%	%
b. Charcoal or chemical wood 2	%	%	%	%	%	%
c. Industrial fuel at this or other mill 3	%	%	%	%	%	%
d. Domestic household fuel -- sold or given away 4	%	%	%	%	%	%
e. Miscellaneous uses such as livestock bedding, mulch, small dimension, and specialty items. 5	%	%	%	%	%	%
2. NOT USED: (Including land fill and residues burned as waste. 6	%	%	%	%	%	%
3. TOTAL	%	%	%	%	%	%

DEFINITION OF TERMS

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edging, and veneer cores.

Consumption.—The quantity of a commodity, such as saw logs, utilized.

Fine mill residue.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

Forest industry land.—Land owned by companies or individuals operating primary wood-using mills.

Forest Survey Unit.—A geographic area (group of counties) used by the Forest Inventory and Analysis Project to report periodic inventories and use of forest resources.

Industrial roundwood products.—Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for pulp or board products.

Industrial roundwood production.—The quantity of industrial roundwood harvested in a geographic area.

Industrial roundwood receipts.—The quantity of industrial roundwood received by commercial mills in a geographic area regardless of the geographic source.

Logging residue.—The unused portions of trees cut or killed by logging.

National Forest land.—Federal land that has been legally designated as National Forest or purchase units, and other land under the administration of the USDA Forest Service.

Particleboard.—Panel product produced by compressing and bonding small particles of wood. Includes panels made from shavings, flakes, wafers, chips, sawdust, strands, slivers, or wood wool.

Primary wood-using mills.—Mills receiving roundwood or chips from roundwood for processing into products.

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark generated at manufacturing plants from roundwood processed into principal products. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some product.

Roundwood.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

Standard cord.—A stack of wood bolts (or the equivalent) encompassing 128 cubic feet of wood, bark, and air space. A cord of pulpwood in the North Central Region is assumed to contain 79 cubic feet of wood and 49 cubic feet of bark and air space.

State land.—Land owned by States or land leased to these governmental units for 50 years or more.

Timberland.—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. Generally, this includes areas suitable for growing crops of industrial wood in excess of 20 cubic feet per acre annually.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED IN THIS REPORT

SOFTWOODS
Jack pine ..... *Pinus banksiana*
Red pine ..... *Pinus resinosa*
Eastern white pine ..... *Pinus strobus*
Spruce
  White spruce ..... *Picea glauca*
  Black spruce ..... *Picea mariana*
Balsam fir ..... *Abies balsamea*
Eastern hemlock ..... *Tsuga canadensis*
Tamarack ..... *Larix laricina*
Northern white-cedar ..... *Thuja occidentalis*
Eastern redcedar ..... *Juniperus virginiana*

HARDWOODS
White oak
  White oak ..... *Quercus alba*
  Bur oak ..... *Quercus macrocarpa*
  Chinkapin oak ..... *Quercus muehlenbergii*
  Swamp white oak ..... *Quercus bicolor*
Red oak
  Northern red oak ..... *Quercus rubra*
  Black oak ..... *Quercus velutina*
  Northern pin oak ..... *Quercus ellipsoidalis*
Hickory
  Bitternut hickory ..... *Carya cordiformis*
  Pignut hickory ..... *Carya glabra*
  Shagbark hickory ..... *Carya ovata*
White birch ..... *Betula papyrifera*
Yellow birch ..... *Betula alleghaniensis*
Hard maple
  Black maple ..... *Acer nigrum*
  Sugar maple ..... *Acer saccharum*
Soft maple
  Red maple ..... *Acer rubrum*
  Silver maple ..... *Acer saccharinum*
American beech ..... *Fagus grandifolia*
Ash
  Black ash ..... *Fraxinus nigra*
  White ash ..... *Fraxinus americana*
  Green ash ..... *Fraxinus pennsylvanica*
Balsam poplar ..... *Populus balsamifera*
Aspen
  Bigtooth aspen ..... *Populus grandidentata*
  Quaking aspen ..... *Populus tremuloides*
Eastern cottonwood ..... *Populus deltoides*
American basswood ..... *Tilia americana*
Black walnut ..... *Juglans nigra*
Elm
  American elm ..... *Ulmus americana*
  Rock elm ..... *Ulmus thomasii*
  Slippery elm ..... *Ulmus rubra*
Other hardwoods
  Northern catalpa ..... *Catalpa speciosa*
  Black cherry ..... *Prunus serotina*
  River birch ..... *Betula nigra*
  Black locust ..... *Robinia pseudoacacia*
  Honeylocust ..... *Gleditsia triacanthos*
  Red mulberry ..... *Morus rubra*
  Butternut ..... *Juglans cinerea*
  Black willow ..... *Salix nigra*
  Boxelder ..... *Acer negundo*
  Hackberry ..... *Celtis occidentalis*

TABLE TITLES

Table 1.—Number of active primary wood-using mills in Wisconsin, 1967, 1973, 1981, 1986, and 1988

Table 2.—Industrial roundwood receipts by type of mill in Wisconsin, 1967, 1973, 1981, 1986, and 1988

Table 3.—Industrial roundwood production by Forest Survey Unit, species, and product, Wisconsin, 1988

Table 4.—Material harvested on timberland for industrial roundwood by source of material and species group, Wisconsin, 1988

Table 5.—Wisconsin pulpwood production by species group, 1946-1988

Table 6.—Wisconsin pulpwood production by species group and destination, 1988

Table 7.—Pulpwood production by Forest Survey Unit, county, and species group, Wisconsin, 1988

Table 8.—Pulpwood receipts in Wisconsin by species group, 1946-1988

Table 9.—Pulpwood receipts in Wisconsin by area of origin, 1960-1988

Table 10.—Pulpwood receipts in Wisconsin by species group and area of origin, 1988

Table 11.—Saw log production and receipts in Wisconsin by species group, 1986 and 1988

Table 12.—Saw log production by Forest Survey Unit, species group, and State of destination, Wisconsin, 1988

Table 13.—Saw log production by Forest Survey Unit, county, and species group, Wisconsin, 1988

Table 14.—Saw log receipts in Wisconsin by Forest Survey Unit, species group, and State of origin, 1988

Table 15.—Veneer log production and receipts in Wisconsin for selected years, 1946-1988

Table 16.—Veneer log production and receipts by species group in Wisconsin, 1986 and 1988

Table 17.—Veneer log and bolt production in Wisconsin by species and State or country of destination, 1988

Table 18.—Veneer log receipts in Wisconsin by area of origin for selected years, 1946-1988

Table 19.—Veneer log and bolt receipts in Wisconsin by species group and area of origin, 1988

Table 20.—Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1988

Table 21.—Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1988

Table 22.—Logging residue from timberland generated during industrial roundwood production by Forest Survey Unit, county, and species group, Wisconsin, 1988

Table 23.—Residue produced at primary wood-using mills by type of material, type of use, and county, Wisconsin, 1988

Table 1.--Number of active primary wood-using mills in Wisconsin, 1967, 1973, 1981, 1986, and 1988

Kind of mill	1967	1973	1981	1986	1988
Sawmills					
Large 1/	6	15	23	21	32
Medium 2/	73	101	110	103	92
Small 3/	739	411	480	333	337
Total	818	527	613	457	461
Pulp mills 4/	27	24	23	21	19
Veneer mills	26	19	15	15	17
Other mills	27	13	12	15	15
Total	898	583	663	508	512

1/ Annual lumber production in excess of 5 million board feet.

2/ Annual lumber production from 1 million to 5 million board feet.

3/ Annual lumber production less than 1 million board feet.

4/ Includes flakeboard plants after 1978, formerly reported in other mills category.

Table 2.--Industrial roundwood receipts by type of mill in Wisconsin, 1967, 1973, 1981, 1986, and 1988

(In million cubic feet)

	All species				
Kind of mill	1967	1973	1981	1986	1988
Pulp mills 1/	215.6	179.2	208.7	224.0	226.1
Sawmills	61.2	68.0	94.4	93.2	93.4
Other mills 2/	15.3	12.5	6.6	9.7	9.2
Total	292.1	259.7	309.7	326.9	328.7
	Softwoods				
Pulp mills	90.1	63.0	62.7	55.9	67.2
Sawmills	4.8	8.8	15.8	11.3	13.2
Other mills	*3/*	*3/*	0.2	0.4	0.1
Total	94.9	71.8	78.7	67.6	80.5
	Hardwoods				
Pulp mills	125.5	116.2	146.0	168.1	158.9
Sawmills	56.4	59.2	78.6	81.9	80.2
Other mills	15.3	12.5	6.4	9.3	9.1
Total	197.2	187.9	231.0	259.3	248.2

1/ Includes flakeboard plants after 1977, formerly reported in other mills category.

2/ Does not include treating plants or fuelwood receipts.

3/ Less than 500 thousand cubic feet.

Table 3.-- Industrial roundwood production by Forest Survey Unit, species, and product, Wisconsin, 1988

ALL UNITS

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 1/	*MCF 2/*	*MBF 1/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Pieces*	*MCF 2/*	*Thou. pieces*	*MCF 2/*	*MCF 2/*	*MCF 2/*
SOFTWOODS														
Cedar	1,218	251	--	--	--	--	--	--	2,325	13	108	111	9	384
Balsam fir	1,674	344	99	13	70,799	5,568	--	--	--	--	--	--	--	5,925
Hemlock	9,318	1,581	162	24	46,029	3,632	--	--	--	--	--	--	--	5,237
Jack pine	10,368	2,173	1,007	164	284,913	22,473	--	--	--	--	30	31	--	24,841
Red pine	28,793	4,888	2,140	348	264,121	20,868	825	54	7,120	42	781	799	108	27,107
White pine	36,679	6,233	1,856	300	25,463	2,002	--	--	--	--	--	--	11	8,546
Spruce	347	68	546	89	43,171	3,397	--	--	--	--	--	--	--	3,554
Tamarack	12	2	24	3	4,342	337	--	--	--	--	--	--	--	342
Total	88,409	15,540	5,834	941	738,838	58,277	825	54	9,445	55	919	941	128	75,936
HARDWOODS														
Ash	16,838	3,000	280	43	61,186	4,828	432	28	--	--	--	--	--	7,899
Aspen	100,782	17,583	12,496	2,035	1,171,236	92,520	3,338	225	--	--	--	--	2,394	114,757
Balsam poplar	437	75	--	--	2,304	182	70	3	--	--	--	--	--	260
Basswood	33,770	6,022	4,134	672	22,952	1,802	921	62	--	--	--	--	--	8,558
Beech	1,551	269	6	--	2,546	196	38	--	--	--	--	--	--	465
White birch	14,912	2,659	243	36	278,674	22,038	1,314	87	--	--	--	--	--	24,820
Yellow birch	5,505	975	421	68	35,206	2,772	219	14	--	--	--	--	--	3,829
Cottonwood	1,177	200	262	44	--	--	23	--	--	--	--	--	--	244
Elm	4,441	779	2	--	31,285	2,466	304	20	--	--	--	--	--	3,265
Hickory	1,657	277	22	4	53	--	27	--	--	--	--	--	--	281
Hard maple	58,506	9,778	3,269	532	209,220	16,542	1,509	99	--	--	--	--	--	26,951
Soft maple	27,962	4,978	1,140	183	154,313	12,192	2,050	139	--	--	--	--	--	17,492
Red oak	173,129	30,306	13,161	2,139	60,746	4,794	1,372	93	--	--	--	--	--	37,332
White oak	43,028	7,527	1,388	217	15,007	1,179	24	--	--	--	--	--	--	8,923
Walnut	2,074	362	--	--	--	--	--	--	--	--	--	--	--	362
Other hardwoods	1,974	342	20	4	10,884	849	--	--	--	--	--	--	--	1,195
Total	487,743	85,132	36,844	5,977	2,055,612	162,360	11,641	770	--	--	--	--	2,394	256,633
All species	576,152	100,672	42,678	6,918	2,794,450	220,637	12,466	824	9,445	55	919	941	2,522	332,569

(Table 3 continued on next page)

(Table 3 continued)

NORTHEAST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 1/	*MCF 2/*	*MBF 1/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Pieces*	*MCF 2/*	*Thou. pieces*	*MCF 2/*	*MCF 2/*	*MCF 2/*
SOFTWOODS														
Cedar	459	96	--	--	--	--	--	--	2,325	13	108	111	8	228
Balsam fir	650	133	22	3	38,472	3,030	--	--	--	--	--	--	--	3,166
Hemlock	8,970	1,524	37	5	40,171	3,174	--	--	--	--	--	--	--	4,703
Jack pine	3,103	649	227	37	89,783	7,082	--	--	--	--	--	--	--	7,768
Red pine	9,270	1,575	482	78	71,583	5,655	825	54	--	--	--	--	102	7,464
White pine	9,627	1,638	468	75	8,674	680	--	--	--	--	--	--	10	2,403
Spruce	253	51	123	20	26,147	2,059	--	--	--	--	--	--	--	2,130
Tamarack	--	--	6	--	1,657	131	--	--	--	--	--	--	--	131
Total	32,332	5,666	1,365	218	276,487	21,811	825	54	2,325	13	108	111	120	27,993
HARDWOODS														
Ash	4,778	856	113	18	21,143	1,671	179	12	--	--	--	--	--	2,557
Aspen	58,953	10,295	2,449	397	417,908	33,011	1,246	84	--	--	--	--	586	44,373
Balsam poplar	318	55	--	--	--	--	29	1	--	--	--	--	--	56
Basswood	12,433	2,224	1,219	197	13,949	1,099	382	26	--	--	--	--	--	3,546
Beech	561	96	6	--	2,262	179	16	--	--	--	--	--	--	275
White birch	6,876	1,228	129	20	130,005	10,278	415	27	--	--	--	--	--	11,553
Yellow birch	3,416	606	299	49	21,127	1,663	91	6	--	--	--	--	--	2,324
Cottonwood	87	12	--	--	--	--	9	--	--	--	--	--	--	12
Elm	1,246	222	1	--	15,843	1,248	126	8	--	--	--	--	--	1,478
Hickory	187	31	11	2	27	--	11	--	--	--	--	--	--	33
Hard maple	29,048	4,859	1,744	284	122,434	9,685	626	39	--	--	--	--	--	14,867
Soft maple	7,691	1,369	375	62	69,372	5,486	712	49	--	--	--	--	--	6,966
Red oak	18,098	3,168	5,160	838	13,759	1,082	196	13	--	--	--	--	--	5,101
White oak	1,226	211	91	12	131	8	10	--	--	--	--	--	--	231
Walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	430	74	10	2	7,756	614	--	--	--	--	--	--	--	690
Total	145,348	25,306	11,607	1,881	835,716	66,024	4,048	265	0	0	0	0	586	94,062
All species	177,680	30,972	12,972	2,099	1,112,203	87,835	4,873	319	2,325	13	108	111	706	122,055

(Table 3 continued on next page)

(Table 3 continued)

NORTHWEST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 1/	*MCF 2/*	*MBF 1/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Pieces*	*MCF 2/*	*Thou. pieces*	*MCF 2/*	*MCF 2/*	*MCF 2/*
SOFTWOODS														
Cedar	45	9	--	--	--	--	--	--	--	--	--	--	1	10
Balsam fir	344	70	77	10	31,339	2,464	--	--	--	--	--	--	--	2,544
Hemlock	24	5	125	19	3,596	285	--	--	--	--	--	--	--	309
Jack pine	6,808	1,429	780	127	73,015	5,760	--	--	--	--	30	31	--	7,347
Red pine	13,399	2,280	1,658	270	39,349	3,111	--	--	7,120	42	650	666	2	6,371
White pine	4,684	795	1,380	224	1,593	126	--	--	--	--	--	--	1	1,146
Spruce	75	14	423	69	15,052	1,188	--	--	--	--	--	--	--	1,271
Tamarack	--	--	18	3	2,067	160	--	--	--	--	--	--	--	163
Total	25,379	4,602	4,461	722	166,011	13,094	--	--	7,120	42	680	697	4	19,161
HARDWOODS														
Ash	3,050	544	83	11	32,128	2,538	--	--	--	--	--	--	--	3,093
Aspen	24,956	4,355	9,939	1,619	573,581	45,313	--	--	--	--	--	--	1,179	52,466
Balsam poplar	75	11	--	--	2,304	182	--	--	--	--	--	--	--	193
Basswood	7,945	1,416	2,203	358	8,295	653	--	--	--	--	--	--	--	2,427
Beech	46	6	--	--	91	6	--	--	--	--	--	--	--	12
White birch	6,152	1,101	96	14	127,775	10,109	--	--	--	--	--	--	--	11,224
Yellow birch	1,331	239	110	17	10,668	840	--	--	--	--	--	--	--	1,096
Cottonwood	26	4	--	--	--	--	--	--	--	--	--	--	--	4
Elm	665	114	--	--	7,834	619	--	--	--	--	--	--	--	733
Hickory	66	10	--	--	24	--	--	--	--	--	--	--	--	10
Hard maple	10,663	1,783	610	100	65,831	5,205	--	--	--	--	--	--	--	7,088
Soft maple	4,810	857	197	31	57,992	4,584	--	--	--	--	--	--	--	5,472
Red oak	21,405	3,748	2,645	430	20,341	1,606	--	--	--	--	--	--	--	5,784
White oak	2,888	506	54	7	3,243	253	--	--	--	--	--	--	--	766
Walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	28	3	--	--	1,870	144	--	--	--	--	--	--	--	147
Total	84,106	14,697	15,937	2,587	911,977	72,052	--	--	--	--	--	--	1,179	90,515
All species	109,485	19,299	20,398	3,309	1,077,988	85,146	--	--	7,120	42	680	697	1,183	109,676

(Table 3 continued on next page)

(Table 3 continued)

CENTRAL UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 1/	*MCF 2/*	*MBF 1/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Pieces*	*MCF 2/*	*Thou. pieces*	*MCF 2/*	*MCF 2/*	*MCF 2/*
SOFTWOODS														
Cedar	185	37	--	--	--	--	--	--	--	--	--	--	--	37
Balsam fir	677	140	--	--	889	65	--	--	--	--	--	--	--	205
Hemlock	175	29	--	--	2,187	171	--	--	--	--	--	--	--	200
Jack pine	346	72	--	--	115,996	9,151	--	--	--	--	--	--	--	9,223
Red pine	2,970	501	--	--	121,221	9,579	--	--	--	--	69	70	--	10,150
White pine	20,177	3,430	6	1	12,733	1,006	--	--	--	--	--	--	--	4,437
Spruce	1	--	--	--	1,714	131	--	--	--	--	--	--	--	131
Tamarack	1	--	--	--	618	46	--	--	--	--	--	--	--	46
Total	24,532	4,209	6	1	255,358	20,149	--	--	--	--	69	70	--	24,429
HARDWOODS														
Ash	3,741	666	66	11	7,604	598	--	--	--	--	--	--	--	1,275
Aspen	11,706	2,037	52	9	176,325	13,928	872	59	--	--	--	--	50	16,083
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	5,779	1,029	318	51	588	43	--	--	--	--	--	--	--	1,123
Beech	445	81	--	--	183	11	--	--	--	--	--	--	--	92
White birch	1,176	206	15	2	19,960	1,580	236	16	--	--	--	--	--	1,804
Yellow birch	723	126	12	2	3,212	252	--	--	--	--	--	--	--	380
Cottonwood	12	1	--	--	--	--	--	--	--	--	--	--	--	1
Elm	467	81	1	--	7,158	568	--	--	--	--	--	--	--	649
Hickory	225	36	11	2	2	--	--	--	--	--	--	--	--	38
Hard maple	8,242	1,373	548	90	18,865	1,490	--	--	--	--	--	--	--	2,953
Soft maple	6,308	1,127	56	8	25,404	2,007	872	59	--	--	--	--	--	3,201
Red oak	44,931	7,867	1,810	296	25,634	2,027	400	27	--	--	--	--	--	10,217
White oak	12,615	2,205	75	12	10,961	866	--	--	--	--	--	--	--	3,083
Walnut	10	1	--	--	--	--	--	--	--	--	--	--	--	1
Other hardwoods	218	37	10	2	1,183	88	--	--	--	--	--	--	--	127
Total	96,598	16,873	2,974	485	297,079	23,458	2,380	161	--	--	--	--	50	41,027
All species	121,130	21,082	2,980	486	552,437	43,607	2,380	161	--	--	69	70	50	65,456

(Table 3 continued on next page)

(Table 3 continued)

SOUTHWEST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 1/	*MCF 2/*	*MBF 1/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Pieces*	*MCF 2/*	*Thou. pieces*	*MCF 2/*	*MCF 2/*	*MCF 2/*
SOFTWOODS														
Cedar	15	2	--	--	--	--	--	--	--	--	--	--	--	2
Balsam fir	--	--	--	--	73	7	--	--	--	--	--	--	--	7
Hemlock	--	--	--	--	23	--	--	--	--	--	--	--	--	--
Jack pine	109	23	--	--	5,679	447	--	--	--	--	--	--	--	470
Red pine	2,355	399	--	--	20,961	1,656	--	--	--	--	62	63	4	2,122
White pine	1,273	216	2	--	1,283	98	--	--	--	--	--	--	--	314
Spruce	--	--	--	--	174	13	--	--	--	--	--	--	--	13
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	3,752	640	2	--	28,193	2,221	--	--	--	--	62	63	4	2,928
HARDWOODS														
Ash	2,594	460	10	2	46	3	--	--	--	--	--	--	--	465
Aspen	4,507	785	52	9	2,378	187	--	--	--	--	--	--	579	1,560
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	5,386	959	225	37	30	--	--	--	--	--	--	--	--	996
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White birch	368	63	3	--	276	21	--	--	--	--	--	--	--	84
Yellow birch	4	--	--	--	31	3	--	--	--	--	--	--	--	3
Cottonwood	400	68	200	34	--	--	--	--	--	--	--	--	--	102
Elm	1,684	300	--	--	28	--	--	--	--	--	--	--	--	300
Hickory	864	149	--	--	--	--	--	--	--	--	--	--	--	149
Hard maple	7,075	1,185	148	24	202	14	--	--	--	--	--	--	--	1,223
Soft maple	4,672	828	478	77	139	9	--	--	--	--	--	--	--	914
Red oak	74,016	12,956	3,303	535	193	15	--	--	--	--	--	--	--	13,506
White oak	19,552	3,422	1,161	185	81	6	--	--	--	--	--	--	--	3,613
Walnut	1,696	301	--	--	--	--	--	--	--	--	--	--	--	301
Other hardwoods	927	160	--	--	16	--	--	--	--	--	--	--	--	160
Total	123,745	21,636	5,580	903	3,420	258	--	--	--	--	--	--	579	23,376
All species	127,497	22,276	5,582	903	31,613	2,479	--	--	--	--	62	63	583	26,304

(Table 3 continued on next page)

(Table 3 continued)

SOUTHEAST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Industrial fuelwood		Poles		Posts		Other products	All products
	MBF 1/	*MCF 2/*	*MBF 1/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Cords 3/*	*MCF 2/*	*Pieces*	*MCF 2/*	*Thou. pieces*	*MCF 2/*	*MCF 2/*	*MCF 2/*
SOFTWOODS														
Cedar	514	107	--	--	--	--	--	--	--	--	--	--	--	107
Balsam fir	3	1	--	--	26	2	--	--	--	--	--	--	--	3
Hemlock	149	23	--	--	52	2	--	--	--	--	--	--	--	25
Jack pine	2	--	--	--	440	33	--	--	--	--	--	--	--	33
Red pine	799	133	--	--	11,007	867	--	--	--	--	--	--	--	1,000
White pine	918	154	--	--	1,180	92	--	--	--	--	--	--	--	246
Spruce	18	3	--	--	84	6	--	--	--	--	--	--	--	9
Tamarack	11	2	--	--	--	--	--	--	--	--	--	--	--	2
Total	2,414	423	--	--	12,789	1,002	--	--	--	--	--	--	--	1,425
HARDWOODS														
Ash	2,675	474	8	1	265	18	253	16	--	--	--	--	--	509
Aspen	660	111	4	1	1,044	81	1,220	82	--	--	--	--	--	275
Balsam poplar	44	9	--	--	--	--	41	2	--	--	--	--	--	11
Basswood	2,227	394	169	29	90	7	539	36	--	--	--	--	--	466
Beech	499	86	--	--	10	--	22	--	--	--	--	--	--	86
White birch	340	61	--	--	658	50	663	44	--	--	--	--	--	155
Yellow birch	31	4	--	--	168	14	128	8	--	--	--	--	--	26
Cottonwood	652	115	62	10	--	--	14	--	--	--	--	--	--	125
Elm	379	62	--	--	422	31	178	12	--	--	--	--	--	105
Hickory	315	51	--	--	--	--	16	--	--	--	--	--	--	51
Hard maple	3,478	578	219	34	1,888	148	883	60	--	--	--	--	--	820
Soft maple	4,481	797	34	5	1,406	106	466	31	--	--	--	--	--	939
Red oak	14,679	2,567	243	40	819	64	776	53	--	--	--	--	--	2,724
White oak	6,747	1,183	7	1	591	46	14	--	--	--	--	--	--	1,230
Walnut	368	60	--	--	--	--	--	--	--	--	--	--	--	60
Other hardwoods	371	68	--	--	59	3	--	--	--	--	--	--	--	71
Total	37,946	6,620	746	121	7,420	568	5,213	344	--	--	--	--	--	7,653
All species	40,360	7,043	746	121	20,209	1,570	5,213	344	--	--	--	--	--	9,078

1/ Thousand board feet, International 1/4-inch rule.

2/ Thousand cubic feet.

3/ Standard cords are 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

Table 4.-- Material harvested on timberland for industrial roundwood by source of material and species group, Wisconsin, 1988

(In thousand cubic feet)

Species group	Growing stock				Nongrowing stock						Total material used for products	Total material not used	Total material harvested
	Used for products				Used for products								
	Saw-timber	Pole-timber	Residue	TOTAL	Limb-wood	Sap-lings	Cull trees	Dead trees	Not used	TOTAL			
SOFTWOODS													
Cedar	257	113	26	396	5	7	2	0	91	105	384	117	501
Balsam fir	2,979	2,406	146	5,531	206	119	34	181	1,604	2,144	5,925	1,750	7,675
Hemlock	3,100	1,653	122	4,875	215	133	92	44	1,312	1,796	5,237	1,434	6,671
Jack pine	7,951	12,115	538	20,604	1,086	684	242	2,763	7,019	11,794	24,841	7,557	32,398
Red pine	14,353	9,896	652	24,901	1,234	807	580	237	6,056	8,914	27,107	6,708	33,815
White pine	6,985	1,177	383	8,545	182	71	77	54	2,744	3,128	8,546	3,127	11,673
Spruce	1,767	1,453	89	3,309	126	70	29	109	943	1,277	3,554	1,032	4,586
Tamarack	170	144	6	320	11	7	0	10	90	118	342	96	438
Total	37,562	28,957	1,962	68,481	3,065	1,898	1,056	3,398	19,859	29,276	75,936	21,821	97,757
HARDWOODS													
Ash	3,849	1,690	520	6,059	578	7	376	1,399	3,029	5,389	7,899	3,549	11,448
Aspen	71,172	34,056	6,918	112,146	2,206	32	5,557	1,734	41,893	51,422	114,757	48,811	163,568
Balsam poplar	117	58	16	191	23	0	13	49	97	182	260	113	373
Basswood	5,784	1,121	880	7,785	268	3	326	1,056	3,483	5,136	8,558	4,363	12,921
Beech	277	76	37	390	23	0	18	71	191	303	465	228	693
White birch	5,045	16,033	1,223	22,301	1,792	335	630	985	8,291	12,033	24,820	9,514	34,334
Yellow birch	1,683	883	224	2,790	327	1	207	728	1,426	2,689	3,829	1,650	5,479
Cottonwood	199	17	28	244	1	0	7	20	98	126	244	126	370
Elm	1,384	782	179	2,345	291	1	174	633	1,216	2,315	3,265	1,395	4,660
Hickory	228	24	32	284	0	0	1	28	124	153	281	156	437
Hard maple	17,090	5,790	2,123	25,003	1,657	28	2,252	134	9,404	13,475	26,951	11,527	38,478
Soft maple	8,128	5,781	1,104	15,013	1,304	226	1,442	611	6,117	9,700	17,492	7,221	24,713
Red oak	30,663	3,925	4,361	38,949	1,099	21	1,167	457	15,364	18,108	37,332	19,725	57,057
White oak	7,344	955	1,025	9,324	254	3	252	115	3,744	4,368	8,923	4,769	13,692
Walnut	281	33	41	355	2	0	7	39	160	208	362	201	563
Other hardwoods	542	272	68	882	94	0	55	232	458	839	1,195	526	1,721
Total	153,786	71,496	18,779	244,061	9,919	657	12,484	8,291	95,095	126,446	256,633	113,874	370,507
All species	191,348	100,453	20,741	312,542	12,984	2,555	13,540	11,689	114,954	155,722	332,569	135,695	468,264

Table 5.--Wisconsin pulpwood production by species group, 1946-1988

(In thousand standard cords, unpeeled) 1/

Year	Roundwood									Residue	
	Total	Pine	Balsam fir	Hemlock	Spruce	Cedar & tamarack	Aspen	Birch	Other hardwoods	Soft-woods	Hard-woods
1946	433	75	48	64	32	3	202	4	5	2/	2/
1947	497	157	53	50	31	6	187	8	5	2/	2/
1948	472	117	87	51	34	3	167	8	5	2/	2/
1949	427	72	78	47	33	1	184	10	--	2/	2
1950	468	93	69	47	31	2/	195	6	20	1	6
1951	565	102	55	51	30	1	281	28	17	--	--
1952	582	95	76	66	39	1	275	15	15	--	--
1953	553	71	45	51	26	1	306	12	41	--	--
1954	691	113	56	63	31	4	348	27	49	--	--
1955	710	121	48	58	23	4	365	16	75	--	--
1956	960	140	45	56	23	4	507	21	164	--	--
1957	934	126	60	57	27	6	453	27	178	--	--
1958	828	148	62	55	23	6	369	18	147	--	--
1959	972	186	52	49	21	6	431	26	159	5	37
1960	1,052	124	50	52	18	6	540	27	204	4	27
1961	1,078	154	61	47	23	7	530	34	201	3	18
1962	1,140	188	46	42	15	6	572	41	188	6	36
1963	1,302	170	60	52	19	6	613	50	233	13	86
1964	1,244	168	57	52	20	5	603	41	222	11	65
1965	1,253	207	50	60	15	4	607	24	197	14	75
1966	1,536	215	55	69	17	3	810	39	243	12	73
1967	1,417	174	48	42	13	3	739	84	203	10	101
1968	1,298	199	51	44	11	5	629	57	185	16	101
1969	1,450	216	50	51	13	2	697	62	238	15	106
1970	1,656	259	68	53	16	4	771	76	296	19	94
1971	1,552	268	54	42	12	3	736	51	269	16	101
1972	1,538	246	49	42	13	3	685	47	333	10	110
1973	1,758	232	67	32	16	1	761	73	400	21	155
1974	2,053	291	85	45	19	2	797	102	506	26	180
1975	1,505	240	98	45	25	4	588	83	244	36	142
1976	1,840	286	89	43	19	3	694	114	425	38	129
1977	1,816	297	73	43	19	5	696	103	383	48	149
1978	1,895	358	75	52	20	4	669	121	373	40	183
1979 3/	2,109	361	84	40	19	2	751	151	441	49	211
1980 3/	2,362	388	101	34	32	4	873	185	456	40	249
1981 3/	2,389	419	105	29	27	5	965	159	389	47	244
1982 3/	2,285	494	103	33	28	7	884	154	339	42	201
1983 3/	2,475	412	85	40	28	6	1,025	198	422	48	211
1984 3/	2,647	483	84	25	42	4	1,067	208	439	47	248
1985 3/	2,588	452	72	37	36	2	1,073	193	431	51	241
1986 3/	2,926	500	46	37	30	2	1,208	283	528	52	240
1987 3/	2,869	489	45	42	36	2	1,097	256	605	47	250
1988 3/	3,084	574	71	46	43	4	1,171	279	606	56	234

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Less than 500 cords.

3/ Includes logs, bolts, and wood residue used in manufacturing particleboard and waferboard.

Table 6.-- Wisconsin pulpwood production by species group and destination, 1988

(In thousand standard cords, unpeeled) 1/

Class of material and species group	Total	Michigan	Minnesota	Wisconsin	Canada
ROUNDWOOD					
SOFTWOODS					
Cedar	--	--	--	--	--
Balsam fir	71	2	18	51	--
Hemlock	46	*2/*	46	--	--
Jack pine	285	*2/*	5	280	--
Red pine	264	--	5	259	--
White pine	25	--	*2/*	25	--
Spruce	43	1	3	39	--
Tamarack	4	--	--	4	--
Total	738	2	77	659	--
HARDWOODS					
Ash	61	3	1	58	--
Aspen	1,171	48	33	1,090	--
Balsam poplar	2	*2/*	2	--	--
Basswood	23	7	--	15	--
Beech	2	*2/*	--	2	--
White birch	279	60	--	219	--
Yellow birch	35	12	--	23	--
Cottonwood	--	--	--	--	--
Elm	31	3	--	29	--
Hickory	*2/*	--	--	*2/*	--
Hard maple	209	49	--	160	--
Soft maple	154	25	3	126	--
Red oak	61	7	1	53	--
White oak	15	--	--	15	--
Other hardwoods	11	4	--	7	--
Total	2,055	218	40	1,797	--
Total roundwood	2,794	220	117	2,456	--
RESIDUES 3/					
Softwood	56	1	9	47	0
Hardwood	233	11	0	222	*2/*
Total	290	12	9	269	*2/*
ALL MATERIAL	3,083	232	126	2,725	*2/*

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Less than 500 cords.

3/ Chippable mill residues such as slabs, edgings, etc. Roundwood chips are included in roundwood.

Table 7.--Pulpwood production by Forest Survey Unit, county, and species group, Wisconsin, 1988

(In standard cords)

Unit and county	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
NORTHEAST UNIT													
Florence	6,662	3,170	10,761	3,793	635	5,880	308	1,335	40,839	--	1,584	103	10,444
Forest	9,178	2,228	2,550	12,451	606	7,466	183	4,404	41,590	--	2,344	269	14,124
Langlade	1,738	279	4,100	3,975	157	560	104	3,191	37,178	--	1,948	210	10,528
Lincoln	3,210	5,082	4,458	3,308	609	1,457	334	4,000	70,271	--	1,346	6	8,230
Marinette	5,728	675	26,649	10,584	416	2,963	334	1,448	75,059	--	1,550	436	21,978
Menominee	244	25,582	1,852	3,656	742	30	--	872	9,238	--	327	833	2,036
Oconto	627	175	7,213	12,905	239	97	--	665	27,299	--	1,071	112	11,040
Oneida	8,122	1,349	17,692	11,136	1,743	6,022	388	3,372	44,648	--	1,488	11	28,517
Shawano	148	1,004	378	2,653	91	46	--	553	8,912	--	230	176	1,711
Vilas	2,815	627	14,130	7,122	3,436	1,626	6	1,303	62,874	--	2,061	106	21,397
Total	38,472	40,171	89,783	71,583	8,674	26,147	1,657	21,143	417,908	--	13,949	2,262	130,005
NORTHWEST UNIT													
Ashland	4,957	201	4,831	4,344	201	5,902	361	2,771	42,248	--	772	1	9,760
Barron	--	--	207	290	--	--	--	322	23,638	--	47	--	4,109
Bayfield	3,429	66	16,718	6,383	657	190	--	2,011	103,854	1,552	388	--	28,111
Burnett	169	--	21,774	3,075	39	248	--	274	27,702	--	--	--	2,241
Douglas	12,112	46	16,167	8,136	44	1,285	--	3,330	63,683	752	--	--	12,207
Iron	477	163	228	770	192	176	--	747	37,736	--	1,317	79	10,404
Polk	24	--	66	21	--	--	--	89	17,592	--	1	--	948
Price	4,371	1,312	4,027	3,421	143	2,314	750	6,593	50,031	--	1,887	4	16,295
Rusk	65	55	29	1,991	--	69	132	2,878	37,630	--	649	--	6,145
Sawyer	2,013	307	2,137	3,114	57	3,392	163	6,764	86,592	--	2,051	--	24,207
Taylor	3,379	1,446	10	5,707	53	1,248	285	4,263	38,365	--	1,128	7	6,441
Washburn	343	--	6,821	2,097	207	228	376	2,086	44,510	--	55	--	6,907
Total	31,339	3,596	73,015	39,349	1,593	15,052	2,067	32,128	573,581	2,304	8,295	91	127,775
CENTRAL UNIT													
Adams	13	--	17,932	23,187	1,396	--	--	35	1,511	--	6	--	70
Chippewa	179	177	2,236	1,338	--	285	242	1,418	16,947	--	162	--	3,881
Clark	14	27	6,252	3,253	--	11	--	2,402	41,295	--	53	6	5,213
Eau Claire	--	14	4,727	3,603	416	--	--	57	6,561	--	32	--	805
Jackson	--	--	25,161	8,033	916	78	130	52	12,111	--	--	--	1,999
Juneau	--	--	23,597	12,875	722	--	--	162	669	--	--	--	735
Marathon	460	1,460	970	3,135	854	739	51	2,018	44,812	--	259	110	1,845
Marquette	11	--	1,958	10,919	767	33	--	77	277	--	--	2	617
Monroe	--	--	8,329	5,231	731	35	77	188	1,343	--	--	--	747
Portage	166	286	10,692	11,694	1,518	399	59	494	6,036	--	8	16	1,220
Waupaca	32	145	409	9,926	912	--	25	384	6,863	--	59	19	355
Waushara	--	--	4,115	23,370	2,975	38	--	73	868	--	--	23	128
Wood	14	78	9,618	4,657	1,526	96	34	244	37,032	--	9	7	2,345
Total	889	2,187	115,996	121,221	12,733	1,714	618	7,604	176,325	--	588	183	19,960

(Table 7 continued on next page)

(Table 7 continued)

Unit and county	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT													
Buffalo	--	--	223	884	63	--	--	1	--	--	--	--	5
Crawford	--	--	--	105	--	--	--	--	--	--	--	--	--
Dunn	25	13	3,135	5,238	126	--	--	40	1,376	--	14	--	241
Grant	--	10	145	1,039	17	--	--	3	--	--	--	--	--
Iowa	--	--	--	505	248	--	--	--	--	--	--	--	--
Lacrosse	--	--	1,661	2,058	151	71	--	--	--	--	--	--	--
Lafayette	18	--	--	--	--	--	--	--	--	--	--	--	--
Pepin	--	--	43	531	14	--	--	--	--	--	--	--	--
Pierce	16	--	--	11	--	--	--	1	497	--	--	--	1
Richland	--	--	27	391	89	--	--	--	--	--	--	--	--
St. Croix	--	--	60	580	--	--	--	--	505	--	--	--	--
Sauk	14	--	228	5,954	141	28	--	1	--	--	--	--	1
Trempealeau	--	--	157	3,389	361	--	--	--	--	--	16	--	28
Vernon	--	--	--	276	73	75	--	--	--	--	--	--	--
Total	73	23	5,679	20,961	1,283	174	--	46	2,378	--	30	--	276
SOUTHEAST UNIT													
Brown	--	--	19	62	--	--	--	--	202	--	--	--	--
Calumet	--	--	--	--	--	--	--	21	--	--	--	--	42
Columbia	--	--	110	6,334	479	--	--	104	40	--	--	--	335
Dane	--	--	--	--	--	--	--	--	--	--	--	--	--
Dodge	--	14	--	--	--	--	--	--	--	--	--	--	--
Door	--	--	--	--	--	--	--	--	--	--	--	--	--
Fond duLac	--	--	--	1,033	276	60	--	10	--	--	--	--	21
Green	--	--	192	23	--	--	--	8	--	--	--	--	--
Green Lake	--	--	92	674	232	--	--	2	--	--	--	--	4
Jefferson	--	--	--	--	--	--	--	--	--	--	--	--	--
Kenosha	26	25	--	49	--	--	--	--	--	--	--	--	--
Kewaunee	--	--	--	--	--	--	--	--	--	--	--	--	--
Manitowoc	--	13	13	629	--	--	--	51	126	--	--	--	104
Outagamie	--	--	--	296	10	--	--	64	676	--	90	10	142
Ozaukee	--	--	--	52	--	--	--	--	--	--	--	--	--
Racine	--	--	--	--	--	--	--	--	--	--	--	--	--
Rock	--	--	--	11	--	--	--	--	--	--	--	--	--
Sheboygan	--	--	--	124	--	24	--	5	--	--	--	--	10
Walworth	--	--	--	219	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--
Waukesha	--	--	--	1,036	167	--	--	--	--	--	--	--	--
Winnebago	--	--	14	465	16	--	--	--	--	--	--	--	--
Total	26	52	440	11,007	1,180	84	--	265	1,044	--	90	10	658
State total	70,799	46,029	284,913	264,121	25,463	43,171	4,342	61,186	1,171,236	2,304	22,952	2,546	278,674

(Table 7 continued on next page)

(Table 7 continued)

Unit and county	Yellow birch	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	O. hard-woods	All species
NORTHEAST UNIT									
Florence	2,559	1,034	--	11,696	6,426	1,211	--	727	109,167
Forest	2,883	4,653	5	19,212	9,456	504	7	707	134,820
Langlade	2,469	1,171	9	18,936	7,752	1,130	15	1,439	96,889
Lincoln	1,024	1,785	--	10,381	8,399	1,865	--	704	126,469
Marinette	3,455	963	--	15,166	7,919	1,605	1	1,284	178,213
Menominee	1,932	1,800	--	9,262	5,201	813	7	985	65,412
Oconto	1,993	1,327	--	8,277	4,788	1,079	--	616	79,523
Oneida	1,862	1,141	8	11,279	9,512	3,211	12	468	151,981
Shawano	555	1,013	--	4,640	3,759	352	--	247	26,468
Vilas	2,395	956	5	13,585	6,160	1,989	89	579	143,261
Total	21,127	15,843	27	122,434	69,372	13,759	131	7,756	1,112,203
NORTHWEST UNIT									
Ashland	1,559	1,243	4	10,450	5,268	1,723	882	252	97,730
Barron	--	2	--	179	251	1,061	601	34	30,741
Bayfield	501	325	--	4,851	4,892	3,077	18	--	177,023
Burnett	--	3	--	311	394	572	82	19	56,903
Douglas	64	73	--	396	3,915	1,163	1	--	123,374
Iron	1,623	304	7	6,360	3,100	727	7	453	64,870
Polk	--	--	--	44	103	382	140	16	19,426
Price	2,122	1,925	5	14,233	12,897	1,661	17	546	124,554
Rusk	400	597	--	4,722	3,326	2,209	350	234	61,481
Sawyer	3,157	1,507	--	14,622	9,442	4,543	500	104	164,672
Taylor	1,142	1,669	8	8,131	11,963	688	7	80	86,020
Washburn	100	186	--	1,532	2,441	2,535	638	132	71,194
Total	10,668	7,834	24	65,831	57,992	20,341	3,243	1,870	1,077,988
CENTRAL UNIT									
Adams	--	10	--	31	109	3,043	406	18	47,767
Chippewa	581	400	--	2,248	1,920	1,209	404	41	33,668
Clark	592	1,569	2	2,815	5,668	1,933	1,172	272	72,549
Eau Claire	--	87	--	151	641	827	223	57	18,201
Jackson	82	117	--	583	3,674	4,157	1,320	235	58,648
Juneau	--	166	--	777	695	3,209	1,686	36	45,329
Marathon	1,355	3,914	--	5,903	5,480	1,425	308	209	75,307
Marquette	4	70	--	657	363	1,668	1,250	6	18,679
Monroe	--	113	--	306	628	716	289	113	18,846
Portage	198	25	--	1,413	960	3,041	1,960	54	40,239
Waupaca	73	312	--	993	1,247	462	126	54	22,396
Waushara	42	94	--	464	329	200	104	33	32,856
Wood	285	281	--	2,524	3,690	3,744	1,713	55	67,952
Total	3,212	7,158	2	18,865	25,404	25,634	10,961	1,183	552,437

(Table 7 continued on next page)

(Table 7 continued)

Unit and county	Yellow birch	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	O. hard-woods	All species
SOUTHWEST UNIT									
Buffalo	--	1	--	--	1	--	--	3	1,181
Crawford	--	--	--	--	--	--	--	--	105
Dunn	31	15	--	186	125	124	74	10	10,773
Grant	--	9	--	8	7	43	--	--	1,281
Iowa	--	--	--	--	--	--	--	--	753
Lacrosse	--	--	--	--	--	26	7	--	3,974
Lafayette	--	--	--	--	--	--	--	--	18
Pepin	--	--	--	--	--	--	--	--	588
Pierce	--	1	--	7	--	--	--	1	535
Richland	--	--	--	--	--	--	--	--	507
St. Croix	--	--	--	--	--	--	--	--	1,145
Sauk	--	2	--	1	6	--	--	2	6,378
Trempealeau	--	--	--	--	--	--	--	--	3,951
Vernon	--	--	--	--	--	--	--	--	424
Total	31	28	--	202	139	193	81	16	31,613
SOUTHEAST UNIT									
Brown	--	--	--	6	6	--	--	--	295
Calumet	--	64	--	147	148	--	--	--	422
Columbia	--	--	--	347	186	728	591	--	9,254
Dane	--	--	--	--	--	--	--	--	--
Dodge	--	--	--	--	--	--	--	--	14
Door	--	--	--	--	--	--	--	--	--
Fond duLac	--	31	--	72	71	--	--	--	1,574
Green	--	21	--	14	--	--	--	4	262
Green Lake	--	5	--	14	14	--	--	--	1,037
Jefferson	--	--	--	--	--	--	--	--	--
Kenosha	--	--	--	--	--	--	--	--	100
Kewaunee	--	--	--	13	14	--	--	--	27
Manitowoc	--	156	--	365	365	--	--	--	1,822
Outagamie	168	130	--	876	568	91	--	55	3,176
Ozaukee	--	--	--	--	--	--	--	--	52
Racine	--	--	--	--	--	--	--	--	--
Rock	--	--	--	--	--	--	--	--	11
Sheboygan	--	15	--	34	34	--	--	--	246
Walworth	--	--	--	--	--	--	--	--	219
Washington	--	--	--	--	--	--	--	--	--
Waukesha	--	--	--	--	--	--	--	--	1,203
Winnebago	--	--	--	--	--	--	--	--	495
Total	168	422	--	1,888	1,406	819	591	59	20,209
State total	35,206	31,285	53	209,220	154,313	60,746	15,007	10,884	2,794,450

Table 8.--Pulpwood receipts in Wisconsin by species group, 1946-1988

(In thousand standard cords, unpeeled) 1/

Year	Roundwood									Residue	
	Total	Pine	Balsam fir	Hemlock	Spruce	Cedar & tamarack	Aspen	Birch	Other hardwoods	Soft-woods	Hard-woods
1946	1,902	298	280	233	645	16	416	14	2/	2/	2/
1947	1,722	292	230	134	687	19	346	13	2/	2/	1
1948	1,741	307	279	136	663	5	333	17	2/	2/	1
1949	1,426	227	244	101	502	3	332	15	2/	2/	2
1950	1,442	244	238	91	441	3	387	10	21	1	6
1951	2,097	428	232	120	678	10	569	42	18	--	--
1952	2,059	365	288	131	732	6	490	32	15	--	--
1953	1,689	283	179	76	529	2	552	26	42	--	--
1954	1,919	298	228	125	608	5	566	40	49	--	--
1955	1,777	319	199	92	471	5	590	26	75	--	--
1956	2,136	397	195	143	445	9	754	27	166	--	--
1957	2,247	325	254	116	578	14	739	38	183	--	--
1958	1,866	318	200	90	479	18	583	19	159	--	--
1959	1,881	436	169	87	345	17	619	30	165	7	6
1960	2,114	388	176	97	389	26	785	31	208	7	7
1961	1,972	330	177	92	350	19	741	44	196	12	11
1962	2,124	395	155	99	317	19	784	49	206	51	49
1963	2,429	414	175	114	341	22	877	64	235	96	91
1964	2,271	350	139	110	314	20	855	62	233	96	92
1965	2,290	410	114	120	300	19	899	26	219	91	92
1966	2,701	473	139	162	301	11	1,112	44	270	100	89
1967	2,729	415	140	100	308	42	1,115	91	259	135	124
1968	2,226	405	100	86	200	33	860	59	205	160	118
1969	2,514	456	81	112	208	25	978	63	278	192	121
1970	2,821	498	111	118	208	43	1,088	81	333	189	152
1971	2,581	514	88	83	167	37	1,011	53	295	193	140
1972	2,450	443	82	69	181	31	902	48	354	198	142
1973	2,696	387	103	54	224	28	1,006	68	398	279	149
1974	3,135	508	133	69	161	36	1,109	115	558	257	189
1975	2,344	391	155	73	146	30	791	89	288	216	165
1976	2,713	437	137	66	121	34	926	133	486	256	117
1977	2,596	416	109	43	94	31	915	120	445	299	124
1978	2,676	491	99	50	82	25	888	145	450	301	145
1979 3/	3,067	567	115	39	76	21	999	178	548	332	192
1980 3/	3,266	518	147	40	94	34	1,118	231	562	268	254
1981 3/	3,154	512	135	31	86	31	1,182	189	477	252	259
1982 3/	2,978	565	131	36	79	37	1,092	173	434	209	222
1983 3/	3,114	470	114	43	65	27	1,220	217	502	222	234
1984 3/	3,301	540	108	26	95	15	1,269	228	552	204	264
1985 3/	3,104	500	97	39	80	4	1,250	202	494	198	240
1986 3/	3,270	543	59	40	63	4	1,370	240	518	192	241
1987 3/	3,130	538	45	46	73	3	1,199	220	592	157	257
1988 3/	3,287	641	59	48	97	6	1,223	233	555	181	244

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Less than 500 cords.

3/ Includes logs, bolts, and wood residue used in manufacturing particleboard and waferboard.

Table 9.--Pulpwood receipts in Wisconsin by area of origin, 1960-1988

(In thousand standard cords, unpeeled) 1/

Year	All areas	Area of Origin				
		Michigan	Wisconsin	Minnesota	Other states	Canada
1960	2,115	510	1,008	308	82	207
1961	1,972	464	1,050	240	44	174
1962	2,124	540	1,114	216	108	146
1963	2,429	628	1,262	221	153	165
1964	2,272	588	1,207	193	135	149
1965	2,290	608	1,225	159	135	163
1966	2,701	666	1,501	193	185	156
1967	2,729	660	1,387	299	234	149
1968	2,227	455	1,259	166	223	124
1969	2,513	537	1,412	188	257	119
1970	2,820	610	1,627	219	249	115
1971	2,581	567	1,502	188	234	90
1972	2,450	470	1,493	166	230	91
1973	2,697	418	1,671	194	291	123
1974	3,135	534	2,004	261	269	67
1975	2,344	449	1,460	178	177	80
1976	2,713	434	1,784	182	203	110
1977	2,596	407	1,713	154	227	95
1978	2,676	404	1,779	162	242	89
1979 2/	3,067	516	2,024	169	266	92
1980 2/	3,266	490	2,298	216	170	92
1981 2/	3,155	419	2,320	177	164	75
1982 2/	2,979	396	2,231	179	131	42
1983 2/	3,114	391	2,399	155	137	32
1984 2/	3,301	442	2,534	184	134	7
1985 2/	3,104	392	2,465	105	127	15
1986 2/	3,270	369	2,693	69	116	23
1987 2/	3,130	313	2,644	62	90	21
1988 2/	3,288	311	2,771	79	102	25

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Includes logs, bolts, and wood residue used in manufacturing particleboard and waferboard.

Table 10.--Pulpwood receipts in Wisconsin by species group and area of origin, 1988

(In thousand standard cords, unpeeled) 1/

Type of material and species group	Total receipts	Origin of material				
		Michigan	Minnesota	Wisconsin	Other U.S.	Canada
ROUNDWOOD						
SOFTWOODS						
Cedar	--	--	--	--	--	--
Balsam fir	59	8	2/	51	--	--
Hemlock	48	2	--	46	--	--
Jack pine	344	58	7	280	--	--
Red pine	270	7	3	259	2/	--
White pine	27	2	2/	25	--	--
Spruce	97	25	30	39	--	2
Tamarack	6	1	1	4	--	--
Total	851	103	41	705	2/	2
HARDWOODS						
Ash	62	3	1	58	--	--
Aspen	1,223	110	24	1,090	--	--
Basswood	16	1	--	15	--	--
Beech	5	3	--	2	--	--
White birch	233	3	11	219	--	--
Yellow birch	30	7	--	23	--	--
Elm	29	2/	--	29	--	--
Hickory	2/	--	--	2/	--	--
Hard maple	192	32	--	160	--	--
Soft maple	139	12	1	126	--	--
Red oak	55	2	--	53	--	--
White oak	15	2/	--	15	--	--
Other hardwoods	12	4	--	7	--	--
Total	2,011	177	37	1,797	2/	--
All species	2,862	281	78	2,502	2/	2
RESIDUES 3/						
Softwood	181	8	1	47	102	23
Hardwood	244	22	--	222	2/	--
Total	425	30	1	269	102	23
ALL MATERIAL	3,287	311	78	2,772	102	25

1/ 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

2/ Less than 500 cords.

3/ Chippable mill residues such as slabs, edgings, etc. Roundwood chips are included in roundwood.

Table 11.--Saw log production and receipts in Wisconsin by species group, 1986 and 1988

(In thousand board feet) 1/

Species group	Production			Receipts		
	1986	1988	Change	1986	1988	Change
Softwoods						
Cedar	4,107	1,218	-2,889	6,411	1,202	-5,209
Balsam fir	766	1,674	908	948	1,890	942
Hemlock	3,730	9,318	5,588	4,759	9,502	4,743
Jack pine	5,805	10,368	4,563	2,813	7,892	5,079
Red pine	23,213	28,793	5,580	20,612	25,082	4,470
White pine	26,487	36,679	10,192	27,902	37,681	9,779
Spruce	434	347	-87	725	489	-236
Tamarack	12	12	0	11	12	1
Total	64,554	88,409	23,855	64,181	83,750	19,569
Hardwoods						
Ash	11,811	16,838	5,027	12,710	17,523	4,813
Aspen	79,054	100,782	21,728	84,622	109,365	24,743
Balsam poplar	85	437	352	150	638	488
Basswood	33,150	33,770	620	36,217	36,212	-5
Beech	1,296	1,551	255	1,298	1,546	248
Paper birch	13,287	14,912	1,625	13,960	15,382	1,422
Yellow birch	6,237	5,505	-732	7,154	6,310	-844
Cottonwood	555	1,177	622	767	1,105	338
Elm	9,630	4,441	-5,189	9,942	4,746	-5,196
Hickory	1,951	1,657	-294	2,048	1,636	-412
Hard maple	59,798	58,506	-1,292	67,311	63,367	-3,944
Soft maple	23,849	27,962	4,113	24,684	28,047	3,363
Red oak	164,112	173,129	9,017	167,160	173,138	5,978
White oak	38,224	43,028	4,804	39,019	44,275	5,256
Walnut	769	2,074	1,305	917	2,168	1,251
Other hardwoods	1,737	1,974	237	1,793	2,098	305
Total	445,545	487,743	42,198	469,752	507,556	37,804
All species	510,099	576,152	66,053	533,933	591,306	57,373

1/ International 1/4-inch rule.

Table 12.--Saw log production by Forest Survey Unit, species group, and State of destination, Wisconsin, 1988

(Thousand board feet) 1/

Species	Total	Wisconsin	Michigan	Minnesota	Other States
ALL UNITS					
SOFTWOODS					
Cedar	1,218	1,088	130	--	--
Balsam fir	1,674	1,662	--	12	--
Hemlock	9,318	9,315	3	--	--
Jack pine	10,368	4,921	--	5,447	--
Red pine	28,793	21,892	144	6,757	--
White pine	36,679	35,609	152	918	--
Spruce	347	326	21	--	--
Tamarack	12	12	--	--	--
Total	88,409	74,825	450	13,134	--
HARDWOODS					
Ash	16,838	16,476	206	--	156
Aspen	100,782	98,470	2,312	--	--
Balsam poplar	437	437	--	--	--
Basswood	33,770	33,033	209	--	528
Beech	1,551	1,546	5	--	--
White birch	14,912	14,529	383	--	--
Yellow birch	5,505	5,317	188	--	--
Cottonwood	1,177	1,048	--	--	129
Elm	4,441	4,402	29	--	10
Hickory	1,657	1,501	2	--	154
Hard maple	58,506	56,958	1,369	--	179
Soft maple	27,962	27,411	295	--	256
Red oak	173,129	164,480	5,781	--	2,868
White oak	43,028	41,896	10	--	1,122
Walnut	2,074	2,074	--	--	--
Other hardwoods	1,974	1,938	3	--	33
Total	487,743	471,516	10,792	--	5,435
All species	576,152	546,341	11,242	13,134	5,435
NORTHEAST UNIT					
SOFTWOODS					
Cedar	459	329	130	--	--
Balsam fir	650	650	--	--	--
Hemlock	8,970	8,969	1	--	--
Jack pine	3,103	3,103	--	--	--
Red pine	9,270	9,126	144	--	--
White pine	9,627	9,478	149	--	--
Spruce	253	242	11	--	--
Tamarack	0	--	--	--	--
Total	32,332	31,897	435	--	--
HARDWOODS					
Ash	4,778	4,608	170	--	--
Aspen	58,953	56,641	2,312	--	--
Balsam poplar	318	318	--	--	--
Basswood	12,433	12,312	121	--	--
Beech	561	556	5	--	--
White birch	6,876	6,496	380	--	--
Yellow birch	3,416	3,344	72	--	--
Cottonwood	87	87	--	--	--
Elm	1,246	1,222	24	--	--
Hickory	187	185	2	--	--
Hard maple	29,048	28,106	942	--	--
Soft maple	7,691	7,469	222	--	--
Red oak	18,098	13,063	5,035	--	--
White oak	1,226	1,219	7	--	--
Walnut	0	--	--	--	--
Other hardwoods	430	427	3	--	--
Total	145,348	136,053	9,295	--	--
All species	177,680	167,950	9,730	--	--

(Table 12 continued on next page)

(Table 12 continued)

Species	Total	Wisconsin	Michigan	Minnesota	Other States
		NORTHWEST UNIT			
SOFTWOODS					
Cedar	45	45	--	--	--
Balsam fir	344	332	--	12	--
Hemlock	24	22	2	--	--
Jack pine	6,808	1,361	--	5,447	--
Red pine	13,399	6,642	--	6,757	--
White pine	4,684	3,763	3	918	--
Spruce	75	65	10	--	--
Tamarack	0	--	--	--	--
Total	25,379	12,230	15	13,134	--
HARDWOODS					
Ash	3,050	3,014	36	--	--
Aspen	24,956	24,956	--	--	--
Balsam poplar	75	75	--	--	--
Basswood	7,945	7,857	88	--	--
Beech	46	46	--	--	--
White birch	6,152	6,149	3	--	--
Yellow birch	1,331	1,215	116	--	--
Cottonwood	26	26	--	--	--
Elm	665	660	5	--	--
Hickory	66	66	--	--	--
Hard maple	10,663	10,236	427	--	--
Soft maple	4,810	4,737	73	--	--
Red oak	21,405	21,345	60	--	--
White oak	2,888	2,885	3	--	--
Walnut	0	--	--	--	--
Other hardwoods	28	28	--	--	--
Total	84,106	83,295	811	--	--
All species	109,485	95,525	826	13,134	--
		CENTRAL UNIT			
SOFTWOODS					
Cedar	185	185	--	--	--
Balsam fir	677	677	--	--	--
Hemlock	175	175	--	--	--
Jack pine	346	346	--	--	--
Red pine	2,970	2,970	--	--	--
White pine	20,177	20,177	--	--	--
Spruce	1	1	--	--	--
Tamarack	1	1	--	--	--
Total	24,532	24,532	--	--	--
HARDWOODS					
Ash	3,741	3,741	--	--	--
Aspen	11,706	11,706	--	--	--
Balsam poplar	0	--	--	--	--
Basswood	5,779	5,779	--	--	--
Beech	445	445	--	--	--
White birch	1,176	1,176	--	--	--
Yellow birch	723	723	--	--	--
Cottonwood	12	12	--	--	--
Elm	467	467	--	--	--
Hickory	225	225	--	--	--
Hard maple	8,242	8,242	--	--	--
Soft maple	6,308	6,308	--	--	--
Red oak	44,931	44,931	--	--	--
White oak	12,615	12,615	--	--	--
Walnut	10	10	--	--	--
Other hardwoods	218	218	--	--	--
Total	96,598	96,598	--	--	--
All species	121,130	121,130	--	--	--

(Table 12 continued on next page)

(Table 12 continued)

Species	Total	Wisconsin	Michigan	Minnesota	Other States
		SOUTHWEST UNIT			
SOFTWOODS					
Cedar	15	15	--	--	--
Balsam fir	0	--	--	--	--
Hemlock	0	--	--	--	--
Jack pine	109	109	--	--	--
Red pine	2,355	2,355	--	--	--
White pine	1,273	1,273	--	--	--
Spruce	0	--	--	--	--
Tamarack	0	--	--	--	--
Total	3,752	3,752	--	--	--
HARDWOODS					
Ash	2,594	2,438	--	--	156
Aspen	4,507	4,507	--	--	--
Balsam poplar	0	--	--	--	--
Basswood	5,386	4,858	--	--	528
Beech	0	--	--	--	--
White birch	368	368	--	--	--
Yellow birch	4	4	--	--	--
Cottonwood	400	271	--	--	129
Elm	1,684	1,674	--	--	10
Hickory	864	710	--	--	154
Hard maple	7,075	6,896	--	--	179
Soft maple	4,672	4,416	--	--	256
Red oak	74,016	71,148	--	--	2,868
White oak	19,552	18,430	--	--	1,122
Walnut	1,696	1,696	--	--	--
Other hardwoods	927	894	--	--	33
Total	123,745	118,310	--	--	5,435
All species	127,497	122,062	--	--	5,435
		SOUTHEAST UNIT			
SOFTWOODS					
Cedar	514	514	--	--	--
Balsam fir	3	3	--	--	--
Hemlock	149	149	--	--	--
Jack pine	2	2	--	--	--
Red pine	799	799	--	--	--
White pine	918	918	--	--	--
Spruce	18	18	--	--	--
Tamarack	11	11	--	--	--
Total	2,414	2,414	--	--	--
HARDWOODS					
Ash	2,675	2,675	--	--	--
Aspen	660	660	--	--	--
Balsam poplar	44	44	--	--	--
Basswood	2,227	2,227	--	--	--
Beech	499	499	--	--	--
White birch	340	340	--	--	--
Yellow birch	31	31	--	--	--
Cottonwood	652	652	--	--	--
Elm	379	379	--	--	--
Hickory	315	315	--	--	--
Hard maple	3,478	3,478	--	--	--
Soft maple	4,481	4,481	--	--	--
Red oak	14,679	13,993	686	--	--
White oak	6,747	6,747	--	--	--
Walnut	368	368	--	--	--
Other hardwoods	371	371	--	--	--
Total	37,946	37,260	686	--	--
All species	40,360	39,674	686	--	--

1/ International 1/4-inch rule.

Table 13.--Saw log production by Forest Survey Unit, county, and species group, Wisconsin, 1988

(In thousand board feet) 1/

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
NORTHEAST UNIT														
Florence	--	--	1,240	--	124	217	23	--	43	2,828	54	1,117	3	349
Forest	35	136	1,060	1,089	1,924	879	59	--	306	16,053	18	2,393	11	941
Langlade	2	52	28	--	260	230	14	--	394	3,354	27	1,170	20	642
Lincoln	15	150	10	--	140	578	16	--	1,175	2,279	18	1,926	10	398
Marinette	157	3	304	17	167	563	18	--	554	6,841	129	473	15	1,632
Menominee	60	--	6,015	--	22	1,672	--	--	237	1,085	--	1,348	65	86
Oconto	40	2	105	--	1,035	388	--	--	571	9,309	31	720	158	1,143
Oneida	17	122	10	1,089	2,153	2,022	67	--	466	10,570	27	1,297	16	984
Shawano	108	104	146	--	345	535	--	--	872	1,078	--	1,500	255	145
Vilas	25	81	52	908	2,800	2,543	56	--	160	5,556	14	489	8	556
Total	459	650	8,970	3,103	9,270	9,627	253	--	4,778	58,953	318	12,433	561	6,876
NORTHWEST UNIT														
Ashland	27	46	5	--	74	51	33	--	338	358	14	965	7	700
Barron	--	1	--	40	439	638	1	--	218	4,040	--	620	--	143
Bayfield	--	40	--	4,114	4,296	773	3	--	109	777	--	285	--	1,587
Burnett	--	--	--	588	1,528	585	--	--	35	1,097	--	32	--	202
Douglas	1	13	--	1,023	3,592	170	6	--	49	746	--	106	--	425
Iron	--	49	4	544	495	232	19	--	238	1,680	29	486	17	627
Polk	--	--	--	60	96	90	--	--	82	1,106	--	55	--	133
Price	4	29	4	--	3	21	4	--	457	1,734	14	982	8	575
Rusk	--	1	2	9	58	326	1	--	384	5,689	--	1,107	4	241
Sawyer	--	--	4	34	1,267	795	--	--	563	3,774	--	1,675	--	875
Taylor	13	163	5	11	146	244	7	--	404	1,431	18	1,331	10	410
Washburn	--	2	--	385	1,405	759	1	--	173	2,524	--	301	--	234
Total	45	344	24	6,808	13,399	4,684	75	--	3,050	24,956	75	7,945	46	6,152
CENTRAL UNIT														
Adams	--	--	--	13	31	781	--	--	5	311	--	35	--	22
Chippewa	1	1	--	57	351	3,449	--	--	612	5,728	--	1,235	414	245
Clark	11	103	--	178	531	2,184	--	--	753	1,465	--	768	--	115
Eau Claire	--	--	--	2	14	1,560	--	--	57	366	--	114	--	49
Jackson	--	--	--	25	156	2,230	--	--	12	123	--	173	--	71
Juneau	--	--	--	--	23	1,376	--	--	77	647	--	176	--	64
Marathon	39	419	167	13	292	3,290	1	1	1,110	1,192	--	1,458	4	277
Marquette	--	--	--	--	28	657	--	--	10	46	--	43	--	22
Monroe	--	--	--	--	51	161	--	--	105	392	--	312	--	1
Portage	126	103	--	33	292	1,384	--	--	249	442	--	279	--	121
Waupaca	8	51	8	--	187	383	--	--	371	649	--	681	27	44
Waushara	--	--	--	--	883	1,046	--	--	71	121	--	242	--	33
Wood	--	--	--	25	131	1,676	--	--	309	224	--	263	--	112
Total	185	677	175	346	2,970	20,177	1	1	3,741	11,706	--	5,779	445	1,176

(Table 13 continued on next page)

(Table 13 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	--	24	--	--	--	136	1,397	--	535	--	131
Crawford	--	--	--	--	1	2	--	--	191	49	--	396	--	2
Dunn	--	--	--	87	2,181	867	--	--	470	770	--	1,007	--	61
Grant	--	--	--	--	4	11	--	--	301	90	--	327	--	4
Iowa	12	--	--	--	2	30	--	--	119	49	--	262	--	4
Lacrosse	--	--	--	--	2	3	--	--	123	31	--	314	--	1
Lafayette	--	--	--	--	--	--	--	--	8	--	--	45	--	0
Pepin	1	--	--	9	61	90	--	--	185	522	--	300	--	60
Pierce	--	--	--	--	--	1	--	--	91	439	--	366	--	69
Richland	--	--	--	--	--	22	--	--	341	279	--	430	--	6
St. Croix	--	--	--	4	29	73	--	--	109	343	--	247	--	20
Sauk	2	--	--	--	2	82	--	--	278	311	--	253	--	5
Trempealeau	--	--	--	9	49	82	--	--	75	129	--	270	--	1
Vernon	--	--	--	--	--	10	--	--	167	98	--	634	--	4
Total	15	--	--	109	2,355	1,273	--	--	2,594	4,507	--	5,386	--	368
SOUTHEAST UNIT														
Brown	--	--	32	--	50	74	--	--	396	94	--	208	14	46
Calumet	--	--	--	--	50	106	--	--	104	35	--	154	27	0
Columbia	--	--	--	--	--	6	--	--	76	19	--	44	--	0
Dane	15	--	--	--	--	2	--	--	16	13	--	43	--	0
Dodge	4	--	--	--	--	--	--	--	3	1	--	2	--	0
Door	122	3	53	--	45	174	16	11	128	107	33	65	61	145
Fond duLac	--	--	--	--	550	50	--	--	148	16	--	208	12	11
Green	--	--	--	--	--	--	1	--	20	--	--	36	--	0
Green Lake	--	--	--	--	--	--	--	--	5	--	--	16	--	0
Jefferson	--	--	--	--	--	--	--	--	67	--	--	144	11	11
Kenosha	--	--	--	--	--	--	1	--	--	--	--	--	--	0
Kewaunee	68	--	30	--	3	24	--	--	284	59	11	108	97	39
Manitowoc	296	--	34	2	--	328	--	--	434	206	--	270	126	28
Outagamie	--	--	--	--	50	50	--	--	236	71	--	332	11	42
Ozaukee	1	--	--	--	--	--	--	--	27	--	--	93	28	0
Racine	3	--	--	--	--	--	--	--	78	--	--	11	--	0
Rock	--	--	--	--	1	--	--	--	--	--	--	--	--	0
Sheboygan	5	--	--	--	--	54	--	--	296	10	--	177	74	0
Walworth	--	--	--	--	--	--	--	--	--	--	--	5	--	0
Washington	--	--	--	--	--	--	--	--	181	11	--	190	38	11
Waukesha	--	--	--	--	--	--	--	--	86	--	--	11	--	0
Winnebago	--	--	--	--	50	50	--	--	90	18	--	110	--	7
Total	514	3	149	2	799	918	18	11	2,675	660	44	2,227	499	340
State total	1,218	1,674	9,318	10,368	28,793	36,679	347	12	16,838	100,782	437	33,770	1,551	14,912

(Table 13 continued on next page)

(Table 13 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	618	4	49	1	3,645	202	213	3	--	53	10,786
Forest	493	10	267	9	4,749	340	918	23	--	53	31,766
Langlade	198	22	170	18	2,898	925	1,650	68	--	22	12,164
Lincoln	146	6	99	7	2,069	1,089	2,237	102	--	--	12,470
Marinette	224	--	33	2	2,289	1,731	4,357	114	--	--	19,923
Menominee	972	--	151	90	5,405	--	734	116	--	101	18,159
Oconto	198	22	87	12	1,545	1,714	2,649	372	--	39	20,140
Oneida	267	16	156	11	2,038	534	902	38	--	6	22,808
Shawano	102	1	147	31	3,282	918	3,754	369	--	149	13,841
Vilas	198	6	87	6	1,128	238	684	21	--	7	15,623
Total	3,416	87	1,246	187	29,048	7,691	18,098	1,226	--	430	177,680
NORTHWEST UNIT											
Ashland	276	5	66	6	1,761	403	2,342	21	--	1	7,499
Barron	--	--	80	5	818	338	4,042	1,003	--	1	12,427
Bayfield	48	--	--	--	248	367	2,775	--	--	--	15,422
Burnett	--	--	19	1	145	132	1,205	269	--	--	5,838
Douglas	27	--	--	--	104	65	351	--	--	--	6,678
Iron	359	10	159	12	1,374	377	364	13	--	--	7,088
Polk	--	--	47	1	314	227	2,234	458	--	--	4,903
Price	350	5	88	19	2,305	1,091	585	90	--	3	8,371
Rusk	48	--	36	15	785	707	2,342	241	--	1	11,997
Sawyer	80	--	68	--	1,524	184	2,610	180	--	22	13,655
Taylor	132	6	84	7	1,146	815	1,435	330	--	--	8,148
Washburn	11	--	18	--	139	104	1,120	283	--	--	7,459
Total	1,331	26	665	66	10,663	4,810	21,405	2,888	--	28	109,485
CENTRAL UNIT											
Adams	17	6	4	--	1	4	329	163	--	--	1,722
Chippewa	50	--	19	3	1,361	993	5,759	1,697	--	21	21,996
Clark	98	--	70	1	582	641	4,826	1,665	--	10	14,001
Eau Claire	27	--	9	2	76	65	1,819	1,066	--	6	5,232
Jackson	58	--	31	19	15	36	4,677	1,409	--	45	9,080
Juneau	40	2	42	24	188	281	3,497	952	--	35	7,424
Marathon	270	--	103	25	2,785	1,587	4,510	1,074	--	17	18,634
Marquette	17	2	4	--	7	1	600	386	--	3	1,826
Monroe	--	2	100	101	674	329	7,851	1,664	7	36	11,786
Portage	39	--	18	12	557	500	2,847	571	1	6	7,580
Waupaca	43	--	25	32	1,456	1,097	4,138	578	1	28	9,807
Waushara	22	--	5	6	206	160	1,876	636	1	--	5,308
Wood	42	--	37	--	334	614	2,202	754	--	11	6,734
Total	723	12	467	225	8,242	6,308	44,931	12,615	10	218	121,130

(Table 13 continued on next page)

(Table 13 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	1	92	60	156	205	310	9,391	2,024	4	127	14,593
Crawford	--	--	183	92	692	325	4,625	1,303	24	56	7,941
Dunn	1	17	164	20	720	887	4,999	1,248	--	73	13,572
Grant	--	23	171	84	690	217	4,286	1,838	296	78	8,420
Iowa	--	1	71	58	314	108	1,891	783	556	70	4,330
Lacrosse	--	79	152	111	324	178	7,571	1,908	4	15	10,816
Lafayette	--	--	--	2	11	--	114	110	--	6	296
Pepin	1	57	113	28	226	215	4,135	628	5	50	6,686
Pierce	--	46	121	39	488	244	2,982	679	--	82	5,647
Richland	--	1	191	89	1,692	481	4,974	1,845	516	74	10,941
St. Croix	--	2	42	9	183	222	1,483	474	--	54	3,294
Sauk	--	3	158	24	542	1,017	8,551	2,115	184	114	13,641
Trempealeau	1	26	49	42	82	121	9,523	1,869	6	58	12,392
Vernon	--	53	209	110	906	347	9,491	2,728	101	70	14,928
Total	4	400	1,684	864	7,075	4,672	74,016	19,552	1,696	927	127,497
SOUTHEAST UNIT											
Brown	1	65	11	44	259	407	1,185	302	1	--	3,189
Calumet	--	--	--	22	165	258	758	275	1	--	1,955
Columbia	--	--	27	44	36	66	1,249	839	5	85	2,496
Dane	--	4	46	44	32	68	783	604	317	94	2,081
Dodge	--	--	1	--	54	--	86	152	2	6	311
Door	25	43	2	1	292	252	221	79	1	27	1,906
Fond duLac	--	1	37	28	240	178	1,729	672	1	1	3,882
Green	--	--	32	2	141	--	336	356	9	34	967
Green Lake	--	--	--	--	2	--	60	17	--	--	100
Jefferson	--	--	22	9	269	108	1,080	761	1	41	2,524
Kenosha	--	--	5	--	--	2	14	15	1	2	40
Kewaunee	--	32	33	6	328	486	491	154	--	--	2,253
Manitowoc	5	464	43	38	470	620	872	367	--	--	4,603
Outagamie	--	22	22	20	313	533	1,277	416	1	--	3,396
Ozaukee	--	--	--	--	55	108	296	55	--	--	663
Racine	--	2	7	--	1	--	87	62	2	6	259
Rock	--	--	25	18	--	--	520	359	13	39	975
Sheboygan	--	3	17	25	379	313	997	369	1	--	2,720
Walworth	--	11	25	--	--	--	329	240	3	32	645
Washington	--	--	16	8	332	955	1,368	243	--	--	3,353
Waukesha	--	--	8	--	48	--	411	203	8	4	779
Winnebago	--	5	--	6	62	127	530	207	1	--	1,263
Total	31	652	379	315	3,478	4,481	14,679	6,747	368	371	40,360
State total	5,505	1,177	4,441	1,657	58,506	27,962	173,129	43,028	2,074	1,974	576,152

1/ International 1/4-inch rule.

Table 14.--Saw log receipts in Wisconsin by Forest Survey Unit, species group, and State of origin, 1988

(In thousand board feet) 1/

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois
ALL UNITS						
SOFTWOODS						
Cedar	1,202	1,088	77	37	--	--
Balsam fir	1,890	1,662	228	--	--	--
Hemlock	9,502	9,315	187	--	--	--
Jack pine	7,892	4,921	2,971	--	--	--
Red pine	25,082	21,892	3,138	52	--	--
White pine	37,681	35,609	2,069	3	--	--
Spruce	489	326	163	--	--	--
Tamarack	12	12	--	--	--	--
Total	83,750	74,825	8,833	92	--	--
HARDWOODS						
Ash	17,523	16,476	635	225	161	26
Aspen	109,365	98,470	10,859	36	--	--
Balsam poplar	638	437	201	--	--	--
Basswood	36,212	33,033	2,226	647	290	16
Beech	1,546	1,546	--	--	--	--
White birch	15,382	14,529	830	23	--	--
Yellow birch	6,310	5,317	953	40	--	--
Cottonwood	1,105	1,048	14	43	--	--
Elm	4,746	4,402	53	180	95	16
Hickory	1,636	1,501	9	101	25	--
Hard maple	63,367	56,958	5,715	158	450	86
Soft maple	28,047	27,411	562	56	6	12
Red oak	173,138	164,480	1,515	5,193	1,789	161
White oak	44,275	41,896	27	1,760	459	133
Walnut	2,168	2,074	--	56	38	--
Other hardwoods	2,098	1,938	86	53	--	21
Total	507,556	471,516	23,685	8,571	3,313	471
All species	591,306	546,341	32,518	8,663	3,313	471
NORTHEAST UNIT						
SOFTWOODS						
Cedar	6,411	316	39	--	--	--
Balsam fir	93	458	228	--	--	--
Hemlock	1,427	8,998	187	--	--	--
Jack pine	1,180	3,647	2,971	--	--	--
Red pine	9,886	9,038	3,124	--	--	--
White pine	9,532	9,830	2,000	--	--	--
Spruce	1,476	245	132	--	--	--
Total	30,005	32,532	8,681	--	--	--
HARDWOODS				--	--	--
Ash	1,298	6,230	487	--	--	--
Aspen	14,648	54,489	10,859	--	--	--
Balsam poplar	2,346	393	201	--	--	--
Basswood	2,178	14,141	1,808	--	--	--
Beech	10,561	742	--	--	--	--
White birch	3,225	8,044	830	--	--	--
Yellow birch	3,060	3,923	653	--	--	--
Elm	117	501	14	--	--	--
Hickory	2	1,762	53	--	--	--
Hard maple	24,122	360	9	--	--	--
Soft maple	12,422	34,333	3,702	--	--	--
Red oak	7,697	11,705	491	--	--	--
White oak	8	22,945	1,434	--	--	--
Other hardwoods	354	2,597	27	--	--	--
Total	82,038	422	75	--	--	--
All species	112,043	162,587	20,643	--	--	--

(Table 14 continued on next page)

(Table 14 continued)

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois
			NORTHWEST UNIT			
SOFTWOODS						
Cedar	284	142	67	38	37	--
Balsam fir	276	138	138	--	--	--
Hemlock	10	5	5	--	--	--
Jack pine	1,458	729	729	--	--	--
Red pine	14,488	7,244	7,192	--	52	--
White pine	5,338	2,669	2,600	69	--	--
Spruce	174	87	56	31	--	--
Total	22,028	11,014	10,787	138	89	--
HARDWOODS						--
Ash	4,932	2,466	2,298	148	20	--
Aspen	43,444	21,722	21,692	--	30	--
Balsam poplar	15,728	7,864	7,426	418	20	--
Basswood	9,346	4,673	4,673	--	--	--
Beech	1,892	946	646	300	--	--
White birch	4	2	2	--	--	--
Yellow birch	528	264	264	--	--	--
Elm	14	7	7	--	--	--
Hard maple	18,390	9,195	7,182	2,013	--	--
Soft maple	6,254	3,127	3,056	71	--	--
Red oak	39,136	19,568	19,378	81	109	--
White oak	5,168	2,584	2,464	--	120	--
Other hardwoods	98	49	38	11	--	--
Total	144,934	72,467	69,126	3,042	299	--
All species	166,962	83,481	79,913	3,180	388	--
			CENTRAL UNIT			
SOFTWOODS						
Cedar	177	177	--	--	--	--
Balsam fir	1,063	1,063	--	--	--	--
Hemlock	163	163	--	--	--	--
Jack pine	273	273	--	--	--	--
Red pine	1,883	1,883	--	--	--	--
White pine	19,122	19,122	--	--	--	--
Spruce	2	2	--	--	--	--
Tamarack	1	1	--	--	--	--
Total	22,684	22,684	--	--	--	--
HARDWOODS						
Ash	3,150	3,150	--	--	--	--
Aspen	13,350	13,350	--	--	--	--
Basswood	4,182	4,182	--	--	--	--
Beech	414	414	--	--	--	--
White birch	1,130	1,130	--	--	--	--
Yellow birch	706	706	--	--	--	--
Cottonwood	14	14	--	--	--	--
Elm	292	292	--	--	--	--
Hickory	54	54	--	--	--	--
Hard maple	5,391	5,391	--	--	--	--
Soft maple	5,211	5,211	--	--	--	--
Red oak	30,793	30,793	--	--	--	--
White oak	10,688	10,688	--	--	--	--
Walnut	201	107	--	56	38	--
Other hardwoods	135	135	--	--	--	--
Total	75,711	75,617	--	56	38	--
All species	98,395	98,301	--	56	38	--

(Table 14 continued on next page)

(Table 14 continued)

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois
			SOUTHWEST UNIT			
SOFTWOODS						
Cedar	15	15	--	--	--	--
Jack pine	270	270	--	--	--	--
Red pine	1,689	1,689	--	--	--	--
White pine	2,741	2,738	--	3	--	--
Total	4,715	4,712	--	3	--	--
HARDWOODS						
Ash	2,997	2,631	--	205	161	--
Aspen	3,990	3,984	--	6	--	--
Basswood	6,113	5,196	--	627	290	--
White birch	390	367	--	23	--	--
Yellow birch	51	11	--	40	--	--
Cottonwood	310	267	--	43	--	--
Elm	2,071	1,796	--	180	95	--
Hickory	939	813	--	101	25	--
Hard maple	7,885	7,277	--	158	450	--
Soft maple	4,653	4,591	--	56	6	--
Red oak	85,817	78,944	--	5,084	1,789	--
White oak	21,801	19,702	--	1,640	459	--
Walnut	1,806	1,806	--	--	--	--
Other hardwoods	945	892	--	53	--	--
Total	139,768	128,277	--	8,216	3,275	--
All species	144,483	132,989	--	8,219	3,275	--
			SOUTHEAST UNIT			
SOFTWOODS						
Cedar	513	513	--	--	--	--
Balsam fir	3	3	--	--	--	--
Hemlock	149	149	--	--	--	--
Jack pine	2	2	--	--	--	--
Red pine	2,104	2,090	14	--	--	--
White pine	1,319	1,319	--	--	--	--
Spruce	23	23	--	--	--	--
Tamarack	11	11	--	--	--	--
Total	4,124	4,110	14	--	--	--
HARDWOODS						
Ash	2,193	2,167	--	--	--	26
Aspen	4,955	4,955	--	--	--	--
Balsam poplar	44	44	--	--	--	--
Basswood	2,104	2,088	--	--	--	16
Beech	390	390	--	--	--	--
White birch	315	315	--	--	--	--
Yellow birch	31	31	--	--	--	--
Cottonwood	264	264	--	--	--	--
Elm	304	288	--	--	--	16
Hickory	267	267	--	--	--	--
Hard maple	2,861	2,775	--	--	--	86
Soft maple	2,860	2,848	--	--	--	12
Red oak	12,581	12,420	--	--	--	161
White oak	6,578	6,445	--	--	--	133
Walnut	161	161	--	--	--	--
Other hardwoods	472	451	--	--	--	21
Total	36,380	35,909	--	--	--	471
All species	40,504	40,019	14	--	--	471

1/ International 1/4-inch rule.

Table 15.--Veneer log production and receipts in Wisconsin for selected years, 1946-1988

(In thousand board feet) 1/

Year	Production	Receipts
1946	29,267	68,116
1948	32,026	71,791
1950	26,652	62,935
1952	29,956	59,500
1954	27,109	59,573
1956	30,403	66,949
1958	23,740	43,063
1960	25,467	51,298
1963	21,919	37,517
1965	25,203	41,918
1966	23,782	43,104
1968	22,867	42,162
1969	21,037	37,571
1970	15,814	29,896
1972	19,465	36,491
1974 2/	32,224	37,804
1975	37,342	41,605
1976	31,692	33,294
1977	31,685	36,971
1978	20,863	27,903
1980	27,250	34,540
1984	22,989	33,403
1986	26,203	37,607
1988	42,678	42,618

1/ International 1/4-inch rule.

2/ Includes veneer logs received at Iron Wood Products Co.; such receipts are not shown before 1974.

Table 16.--Veneer log production and receipts by species group in Wisconsin, 1986 and 1988

(In thousand board feet) 1/

Species group	Production			Receipts		
	1986	1988	Change	1986	1988	Change
SOFTWOODS						
Balsam fir	--	99	99	--	--	--
Hemlock	--	162	162	--	--	--
Jack pine	54	1,007	953	--	--	--
Red pine	216	2,140	1,924	--	--	--
White pine	340	1,856	1,516	36	270	234
Spruce	81	546	465	--	--	--
Tamarack	--	24	24	--	--	--
Total	691	5,834	5,143	36	270	234
HARDWOOS						
Ash	336	280	-56	807	549	-258
Aspen	3,178	12,496	9,318	1,130	2,430	1,300
Basswood	2,772	4,134	1,362	3,306	6,568	3,262
Beech	--	6	6	244	532	288
White birch	92	243	151	375	333	-42
Yellow birch	771	421	-350	2,492	1,277	-1,215
Cottonwood	239	262	23	404	632	228
Elm	184	2	-182	184	2	-182
Hickory	--	22	22	2	22	20
Hard maple	4,410	3,269	-1,141	11,371	9,448	-1,923
Soft maple	1,816	1,140	-676	2,492	2,505	13
Red oak	11,170	13,161	1,991	14,114	16,615	2,501
White oak	470	1,388	918	562	1,414	852
Other hardwoods	74	20	-54	88	21	-67
Total	25,512	36,844	11,332	37,571	42,348	4,777
All species	26,203	42,678	16,475	37,607	42,618	5,011

1/ International 1/4-inch rule.

Table 17.--Veneer log and bolt production in Wisconsin by species and State or country of destination, 1988

(In thousand board feet) 1/

Species	Total	Destination			
		Wisconsin	Michigan	Indiana	Other
SOFTWOODS					
Cedar	0	--	--	--	--
Balsam fir	99	--	99	--	--
Hemlock	162	--	162	--	--
Jack pine	1,007	--	1,007	--	--
Red pine	2,140	--	2,140	--	--
White pine	1,856	101	1,755	--	--
Spruce	546	--	546	--	--
Tamarack	24	--	24	--	--
Total	5,834	101	5,733	--	--
HARDWOODS	0				
Ash	280	280	--	--	--
Aspen	12,496	2,054	10,442	--	--
Balsam poplar	0	--	--	--	--
Basswood	4,134	4,124	10	--	--
Beech	6	6	--	--	--
White birch	243	243	--	--	--
Yellow birch	421	421	--	--	--
Cottonwood	262	262	--	--	--
Elm	2	2	--	--	--
Hickory	22	22	--	--	--
Hard maple	3,269	2,941	318	--	10
Soft maple	1,140	1,140	--	--	--
Red oak	13,161	13,033	--	90	38
White oak	1,388	1,381	--	7	--
Walnut	0	--	--	--	--
Other hardwoods	20	20	--	--	--
Total	36,844	25,929	10,770	97	48
All species	42,678	26,030	16,503	97	48

1/ International 1/4-inch rule.

Table 18.--Veneer log receipts in Wisconsin by area of origin for selected years, 1946-1988

(In thousand board feet) 1/

Year	All areas	Area of origin				
		Michigan	Wisconsin	Minnesota	Other States	2/ Canada
1946	68,116	28,813	33,834	1,139	919	3,411
1948	71,791	31,553	27,052	4,811	1,066	7,309 3/
1950	62,935	26,198	19,917	4,919	924	10,977 3/
1952	59,500	28,899	15,775	5,826	1,516	7,484
1954	59,573	26,527	15,537	7,962	3,286	6,261
1956	66,949	30,298	18,932	7,221	3,405	7,093
1958	43,063	23,488	8,078	7,027	916	3,554
1960	51,298	24,249	8,659	8,380	5,207	4,803
1963	37,517	18,846	4,950	6,177	2,777	4,767
1965	41,918	23,788	5,918	6,148	1,726	4,338
1966	43,104	22,547	8,044	6,111	1,621	4,781
1968	42,162	20,458	8,265	5,207	2,642	5,590
1969	37,571	18,853	8,001	3,518	2,679	4,520
1970	29,896	15,148	7,347	2,951	1,747	2,703
1972	36,491	18,172	10,893	3,457	1,552	2,417
1974 4/	37,804	19,643	10,922	4,083	1,950	1,206
1975	41,605	24,294	10,221	3,486	1,905	1,699
1976	33,294	20,379	9,009	2,136	1,567	203
1977	36,971	20,752	10,280	3,033	2,412	494
1978	27,903	14,299	9,029	2,468	1,587	520
1980	34,540	14,245	14,058	2,501	3,008	728
1984	33,403	20,575	9,385	2,079	1,225	139
1986	37,607	23,098	13,036	758	627	88
1988	42,618	26,030	12,550	2,929	1,092	17

1/ International 1/4-inch rule.

2/ Includes only logs and bolts shipped to Canadian mills for processing.

3/ Includes nominal quantities from other countries.

4/ Includes all veneer logs received at Iron Wood Products Co.; such receipts are not shown before 1974.

Table 19.--Veneer log and bolt receipts in Wisconsin by species group and area of origin, 1988

(In thousand board feet) 1/

Species group	Total	Wisconsin	Michigan	Minnesota	Iowa	Illinois	Canada
SOFTWOODS							
White pine	270	101	155	14	--	--	--
Total	270	101	155	14	--	--	--
HARDWOODS							
Ash	549	280	263	6	--	--	--
Aspen	2,430	2,054	272	94	10	--	--
Basswood	6,568	4,124	812	1,424	208	--	--
Beech	532	6	526	--	--	--	--
White birch	333	243	87	3	--	--	--
Yellow birch	1,277	421	855	--	--	--	1
Cottonwood	632	262	--	342	28	--	--
Elm	2	2	--	--	--	--	--
Hickory	22	22	--	--	--	--	--
Hard maple	9,448	2,941	6,507	--	--	--	--
Soft maple	2,505	1,140	471	322	572	--	--
Red oak	16,615	13,033	2,598	713	226	--	45
White oak	1,414	1,381	3	11	2	17	--
Other hardwoods	21	20	1	--	--	--	--
Total	42,348	25,929	12,395	2,915	1,046	17	46
All species	42,618	26,030	12,550	2,929	1,046	17	46

1/ International 1/4-inch rule.

Table 20.--Growing stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1988

(In thousand cubic feet)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
NORTHEAST UNIT														
Florence	--	484	439	684	292	82	433	23	74	3,610	9	272	5	797
Forest	7	698	342	403	1,208	195	557	13	276	6,127	2	542	16	1,169
Langlade	--	138	24	261	323	51	44	8	233	3,435	5	316	13	855
Lincoln	4	267	357	283	265	145	110	24	403	5,737	2	402	1	649
Marinette	137	417	100	1,698	823	134	218	24	170	7,590	23	160	24	1,833
Menominee	13	17	2,845	118	259	350	2	--	90	917	--	382	53	165
Oconto	24	46	31	458	1,143	90	7	--	134	3,893	6	184	34	978
Oneida	7	619	99	1,383	1,248	512	463	28	250	5,522	5	305	2	2,187
Shawano	34	34	96	24	260	100	4	--	188	882	--	329	53	148
Vilas	6	225	56	1,119	1,035	725	142	--	100	5,958	2	200	7	1,603
Total	232	2,945	4,389	6,431	6,856	2,384	1,980	120	1,918	43,671	54	3,092	208	10,384
NORTHWEST UNIT														
Ashland	6	372	20	333	374	67	450	27	199	3,527	2	259	1	815
Barron	--	--	--	21	125	113	--	--	54	3,396	--	164	--	316
Bayfield	--	263	11	2,017	1,314	264	40	1	124	8,393	77	97	--	2,260
Burnett	--	12	--	1,516	1,072	105	17	--	21	2,350	--	7	--	194
Douglas	--	883	4	1,255	1,200	33	94	--	183	4,775	38	18	--	935
Iron	--	47	15	148	170	80	23	--	79	3,300	6	159	6	844
Polk	--	2	--	48	83	16	--	--	19	1,578	--	12	--	89
Price	2	325	95	275	279	46	181	55	409	4,295	2	266	1	1,249
Rusk	--	4	4	4	148	58	5	10	213	4,456	--	293	1	475
Sawyer	--	149	28	174	505	197	265	13	439	7,645	--	488	--	1,862
Taylor	2	282	102	2	424	47	92	21	282	3,162	2	314	1	525
Washburn	--	25	--	520	435	146	17	27	135	4,047	--	108	--	528
Total	10	2,364	279	6,313	6,129	1,172	1,184	154	2,157	50,924	127	2,185	10	10,092
CENTRAL UNIT														
Adams	--	--	--	1,142	1,626	234	--	--	3	171	--	7	--	8
Chippewa	--	13	12	154	164	605	21	17	178	2,416	--	236	72	316
Clark	2	24	2	436	345	385	--	--	251	3,374	--	136	--	388
Eau Claire	--	--	--	300	270	302	--	--	12	563	--	22	--	66
Jackson	--	--	--	1,607	614	457	6	9	4	937	--	30	--	153
Juneau	--	--	--	1,500	904	292	--	--	22	170	--	30	--	63
Marathon	8	126	131	63	269	637	54	4	300	3,610	--	293	7	180
Marquette	--	--	--	125	768	169	2	--	5	30	--	8	--	51
Monroe	--	--	--	529	374	79	2	6	28	174	--	55	--	52
Portage	28	35	20	686	867	349	29	4	67	538	--	49	--	107
Waupaca	1	13	11	25	727	131	--	2	90	638	--	134	5	34
Waushara	--	--	--	261	1,788	392	2	--	16	88	--	42	2	16
Wood	--	1	6	618	349	401	7	2	66	2,840	--	46	--	184
Total	39	212	182	7,446	9,065	4,433	123	44	1,042	15,549	--	1,088	86	1,618

(Table 20 continued on next page)

(Table 20 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	14	66	4	--	--	24	844	--	112	--	23
Crawford	--	--	--	--	8	--	--	--	33	9	--	69	--	--
Dunn	--	2	--	219	815	160	--	--	84	282	--	194	--	27
Grant	--	--	--	9	74	4	--	--	52	17	--	57	--	1
Iowa	2	--	--	--	35	23	--	--	20	9	--	46	--	1
Lacrosse	--	--	--	105	143	10	5	--	21	6	--	55	--	--
Lafayette	--	2	--	--	--	--	--	--	1	--	--	8	--	--
Pepin	--	--	--	5	48	16	--	--	32	98	--	52	--	10
Pierce	--	2	--	--	2	--	--	--	16	119	--	65	--	11
Richland	--	--	--	2	27	9	--	--	60	52	--	76	--	1
St. Croix	--	--	--	5	47	14	--	--	19	102	--	43	--	3
Sauk	--	1	--	15	416	25	2	--	49	57	--	45	--	1
Trempealeau	--	--	--	12	245	40	--	--	12	153	--	47	--	2
Vernon	--	--	--	--	20	8	6	--	30	18	--	112	--	1
Total	2	7	--	386	1,946	313	13	--	453	1,766	--	981	--	81
SOUTHEAST UNIT														
Brown	--	--	5	1	12	14	--	--	72	41	--	40	2	11
Calumet	--	--	--	--	8	19	--	--	20	6	--	27	5	2
Columbia	--	--	--	7	443	35	--	--	19	6	--	8	--	26
Dane	3	--	--	--	--	--	--	--	2	2	--	15	--	--
Dodge	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Door	27	1	8	--	7	30	3	2	22	19	7	11	10	26
Fond duLac	--	--	--	--	170	28	4	--	26	2	--	36	2	3
Green	--	--	--	12	2	--	--	--	3	--	--	7	--	--
Green Lake	--	--	--	6	46	16	--	--	1	--	--	2	--	--
Jefferson	--	--	--	--	--	--	--	--	11	--	--	33	2	2
Kenosha	--	2	2	--	4	--	--	--	--	--	--	--	--	--
Kewaunee	15	--	5	--	--	4	--	--	50	11	2	19	17	7
Manitowoc	65	--	5	1	44	58	--	--	78	48	--	47	21	13
Outagamie	--	--	--	--	28	8	--	--	51	94	1	75	2	32
Ozaukee	--	--	--	--	4	--	--	--	5	--	--	17	6	--
Racine	1	--	--	--	--	--	--	--	14	--	--	2	--	--
Rock	--	--	--	--	--	--	--	--	--	--	--	7	--	--
Sheboygan	1	--	--	--	8	9	2	--	51	2	--	31	12	1
Walworth	--	--	--	--	16	--	--	--	--	--	--	8	--	--
Washington	--	--	--	--	--	--	--	--	32	2	--	33	7	2
Waukesha	--	--	--	--	73	12	--	--	16	--	--	2	--	--
Winnebago	--	--	--	1	40	10	--	--	16	3	--	19	--	1
Total	113	3	25	28	905	243	9	2	489	236	10	439	86	126
State total	396	5,531	4,875	20,604	24,901	8,545	3,309	320	6,059	112,146	191	7,785	390	22,301

(Table 20 continued on next page)

(Table 20 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	245	1	61	--	1,441	449	176	--	--	46	9,623
Forest	247	1	278	1	2,197	678	218	4	--	45	15,224
Langlade	160	3	87	3	1,851	668	524	14	--	76	9,092
Lincoln	78	1	106	1	1,066	736	655	20	--	35	11,347
Marinette	218	--	55	--	1,443	816	1,094	31	--	64	17,072
Menominee	268	--	120	16	1,596	341	212	22	--	67	7,853
Oconto	135	3	82	2	866	623	645	72	--	37	9,493
Oneida	139	2	84	2	1,129	705	493	8	--	24	15,216
Shawano	46	--	77	7	985	422	817	70	--	39	4,615
Vilas	167	1	67	1	1,116	436	383	8	--	29	13,386
Total	1,703	12	1,017	33	13,690	5,874	5,217	249	--	462	112,921
NORTHWEST UNIT											
Ashland	138	1	73	1	1,072	409	590	61	--	12	8,809
Barron	--	--	14	1	161	86	912	230	--	2	5,595
Bayfield	36	--	19	--	379	376	743	1	--	--	16,415
Burnett	--	--	3	--	47	48	272	55	--	--	5,719
Douglas	9	--	4	--	44	261	141	--	--	--	9,877
Iron	147	1	43	2	679	264	123	2	--	22	6,160
Polk	--	--	8	--	64	57	482	96	--	--	2,554
Price	167	1	113	3	1,369	1,019	226	18	--	27	10,423
Rusk	29	--	36	2	466	348	658	71	--	12	7,293
Sawyer	172	--	85	--	1,273	639	893	69	--	9	14,905
Taylor	80	1	97	1	753	910	317	63	--	4	7,484
Washburn	6	--	12	--	129	174	474	96	--	6	6,885
Total	784	4	507	10	6,436	4,591	5,831	762	--	94	102,119
CENTRAL UNIT											
Adams	2	1	1	--	2	8	261	57	--	--	3,523
Chippewa	37	--	23	--	390	297	1,231	351	--	5	6,538
Clark	46	--	90	--	292	482	1,049	392	--	15	7,709
Eau Claire	5	--	5	--	24	51	398	217	--	3	2,238
Jackson	14	--	12	3	42	243	1,162	353	--	20	5,666
Juneau	7	--	16	3	86	93	877	290	--	9	4,362
Marathon	116	--	213	4	930	636	962	224	--	13	8,780
Marquette	2	--	5	--	47	23	239	155	--	--	1,629
Monroe	--	--	24	18	138	98	1,577	339	1	13	3,507
Portage	17	--	4	2	206	149	738	238	--	3	4,136
Waupaca	13	--	19	7	355	278	885	119	--	9	3,496
Waushara	5	--	5	1	68	49	366	127	--	2	3,230
Wood	22	--	21	--	233	348	734	254	--	4	6,136
Total	286	1	438	38	2,813	2,755	10,479	3,116	1	96	60,950

(Table 20 continued on next page)

(Table 20 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	--	17	10	27	41	82	1,839	381	1	22	3,507
Crawford	--	--	32	17	124	56	921	246	3	10	1,528
Dunn	2	2	28	3	138	163	1,003	245	--	12	3,379
Grant	--	3	29	15	132	38	844	383	51	14	1,723
Iowa	--	--	12	10	55	19	356	193	97	12	890
Lacrosse	--	32	27	19	56	58	1,704	360	1	2	2,604
Lafayette	--	--	--	--	2	--	21	66	--	1	101
Pepin	--	10	19	6	40	37	800	118	1	9	1,301
Pierce	--	8	21	7	85	42	567	129	--	14	1,088
Richland	--	--	33	16	293	85	949	405	89	12	2,109
St. Croix	--	--	8	1	31	38	279	90	--	9	689
Sauk	--	--	28	3	95	177	1,635	404	32	20	3,005
Trempealeau	--	5	9	8	14	48	1,804	353	1	10	2,763
Vernon	--	27	37	19	161	60	1,820	517	18	12	2,866
Total	2	104	293	151	1,267	903	14,542	3,890	294	159	27,553
SOUTHEAST UNIT											
Brown	--	11	3	8	65	79	226	56	--	--	646
Calumet	--	11	4	3	40	54	142	52	--	--	393
Columbia	--	--	5	8	28	23	297	198	1	16	1,120
Dane	--	1	8	8	5	11	149	114	55	17	390
Dodge	--	--	--	--	10	--	17	28	--	1	57
Door	3	8	--	--	50	44	41	15	--	5	339
Fond duLac	--	--	9	6	47	36	326	127	--	--	822
Green	--	--	8	--	26	--	64	67	1	7	197
Green Lake	--	--	--	--	1	1	14	3	--	--	90
Jefferson	--	--	3	1	47	19	204	143	--	8	473
Kenosha	--	--	1	--	--	--	2	2	--	--	13
Kewaunee	--	6	7	1	62	86	123	29	--	--	444
Manitowoc	1	80	16	7	111	131	168	68	--	--	962
Outagamie	11	3	14	3	150	142	252	78	--	2	946
Ozaukee	--	--	--	--	10	19	55	10	--	--	126
Racine	--	--	1	--	--	--	16	12	--	1	47
Rock	--	--	3	2	--	--	99	67	2	7	187
Sheboygan	--	--	2	3	67	57	188	69	--	--	503
Walworth	--	2	3	--	--	--	62	46	--	6	143
Washington	--	--	2	1	58	166	258	46	--	--	607
Waukesha	--	--	1	--	9	--	77	38	1	1	230
Winnebago	--	1	--	1	11	22	100	39	--	--	264
Total	15	123	90	52	797	890	2,880	1,307	60	71	8,999
State total	2,790	244	2,345	284	25,003	15,013	38,949	9,324	355	882	312,542

Table 21.--Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Wisconsin, 1988

(In thousand board feet) 1/

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
NORTHEAST UNIT														
Florence	--	766	1,620	838	639	294	697	35	144	9,426	45	1,064	10	653
Forest	32	1,179	1,320	1,187	3,516	930	913	21	631	21,266	15	2,241	31	1,330
Langlade	2	247	65	319	781	243	77	12	614	9,291	23	1,225	34	909
Lincoln	16	505	686	347	608	642	182	39	1,307	13,946	15	1,722	9	618
Marinette	270	662	383	2,092	1,869	640	358	39	586	21,883	108	530	50	2,127
Menominee	54	28	9,218	144	508	1,737	3	--	277	2,553	2	1,854	122	173
Oconto	64	74	124	562	2,891	425	11	--	543	13,351	26	716	143	1,338
Oneida	30	1,054	206	2,468	3,942	2,380	809	48	663	17,964	23	1,233	14	1,839
Shawano	112	111	275	29	715	528	5	--	828	2,497	--	1,571	229	209
Vilas	23	409	153	2,046	3,911	3,128	303	4	229	16,621	12	587	15	1,231
Total	603	5,035	14,050	10,032	19,380	10,947	3,358	198	5,822	128,798	269	12,743	657	10,427
NORTHWEST UNIT														
Ashland	25	627	55	523	964	332	789	46	519	9,012	12	1,169	5	947
Barron	--	1	--	52	500	626	1	--	212	11,781	--	830	--	263
Bayfield	--	457	53	5,300	5,609	1,297	169	6	247	20,679	125	392	--	2,325
Burnett	--	19	--	2,229	2,683	570	28	--	51	5,929	--	34	--	247
Douglas	1	1,404	6	2,187	4,553	170	153	--	295	10,659	61	89	--	784
Iron	--	108	36	589	743	390	79	1	262	8,679	24	559	20	899
Polk	--	3	--	99	176	90	--	--	81	4,197	--	62	--	145
Price	6	538	196	420	684	224	326	89	925	11,115	12	976	7	1,049
Rusk	--	8	9	10	321	314	9	15	573	14,122	--	1,363	3	416
Sawyer	--	248	73	368	2,005	1,074	482	22	1,042	20,271	--	2,097	--	1,586
Taylor	11	536	198	11	902	243	150	32	686	7,771	15	1,350	10	565
Washburn	--	42	--	881	1,689	760	27	44	319	10,891	--	562	--	438
Total	43	3,991	626	12,669	20,829	6,090	2,213	255	5,212	135,106	249	9,483	45	9,664
CENTRAL UNIT														
Adams	--	1	--	1,408	3,121	940	--	--	7	531	--	29	--	20
Chippewa	1	21	23	226	528	3,330	32	27	634	8,293	--	1,120	346	340
Clark	10	95	4	649	976	2,114	1	--	826	8,202	--	648	--	277
Eau Claire	--	--	2	370	512	1,562	--	--	53	1,436	--	98	--	68
Jackson	--	--	--	1,983	1,252	2,275	9	15	14	2,163	--	145	--	129
Juneau	--	--	--	1,838	1,739	1,425	--	--	78	686	--	147	--	79
Marathon	35	433	355	87	700	3,290	86	7	1,119	8,663	--	1,399	12	302
Marquette	--	1	--	153	1,482	737	4	--	15	88	--	36	--	46
Monroe	--	--	--	649	747	254	4	9	103	574	--	262	--	27
Portage	114	112	38	863	1,841	1,538	46	7	249	1,415	--	235	1	144
Waupaca	7	51	27	32	1,503	492	--	3	374	1,738	--	658	25	59
Waushara	--	--	--	321	3,968	1,407	4	--	66	255	--	202	2	32
Wood	--	2	10	772	748	1,821	11	4	278	6,486	--	221	1	175
Total	167	716	459	9,351	19,117	21,185	197	72	3,816	40,530	--	5,200	387	1,698

(Table 21 continued on next page)

(Table 21 continued)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
SOUTHWEST UNIT														
Buffalo	--	--	--	17	142	8	--	--	114	4,027	--	550	--	110
Crawford	--	--	--	--	15	2	--	--	161	44	--	333	--	2
Dunn	--	3	2	323	2,886	856	--	--	401	1,087	--	951	--	61
Grant	--	--	1	11	142	12	--	--	252	79	--	275	--	3
Iowa	10	--	--	--	69	63	--	--	100	44	--	220	--	3
Lacrosse	--	--	--	129	277	23	8	--	103	27	--	263	--	1
Lafayette	--	2	--	--	--	--	--	--	7	--	--	38	--	--
Pepin	1	--	--	11	130	89	--	--	155	461	--	251	--	50
Pierce	--	2	--	--	8	1	--	--	77	472	--	310	--	57
Richland	--	--	--	2	52	33	--	--	286	247	--	360	--	5
St. Croix	--	--	--	8	112	71	--	--	91	388	--	207	--	16
Sauk	2	2	--	18	796	97	3	--	233	275	--	212	--	4
Trempealeau	--	--	--	20	498	127	--	--	63	730	--	227	--	2
Vernon	--	--	--	--	37	19	9	--	144	86	--	537	--	3
Total	13	9	3	539	5,164	1,401	20	--	2,187	7,967	--	4,734	--	317
SOUTHEAST UNIT														
Brown	--	--	31	1	56	72	--	--	338	138	1	186	12	46
Calumet	--	--	--	--	48	102	--	--	89	30	--	129	23	1
Columbia	--	--	--	9	844	70	--	--	72	24	--	37	--	15
Dane	13	--	--	--	--	2	--	--	13	11	--	76	--	--
Dodge	3	--	2	--	--	--	--	--	4	1	--	2	--	--
Door	111	3	51	--	43	168	15	10	107	94	28	54	51	121
Fond duLac	--	--	--	--	668	85	7	--	125	14	--	174	10	11
Green	--	--	--	15	3	--	1	--	17	--	--	30	--	--
Green Lake	--	--	--	7	89	31	--	--	4	--	--	13	--	--
Jefferson	--	--	--	--	--	--	--	--	56	--	--	160	10	10
Kenosha	--	3	3	--	6	--	1	--	--	--	--	--	--	--
Kewaunee	61	--	29	--	3	24	--	--	240	52	10	91	81	32
Manitowoc	269	--	35	3	83	316	--	--	368	203	--	226	105	27
Outagamie	--	--	--	--	88	49	--	--	217	243	2	314	12	70
Ozaukee	1	--	--	--	7	--	--	--	23	--	--	78	24	--
Racine	3	--	--	--	--	--	--	--	65	--	--	10	--	--
Rock	--	--	--	--	2	--	--	--	--	--	--	40	--	--
Sheboygan	4	--	--	--	16	52	3	--	248	9	--	148	62	--
Walworth	--	--	--	--	29	--	--	--	--	--	--	44	--	--
Washington	--	--	--	--	--	--	--	--	152	10	--	159	31	10
Waukesha	--	--	--	--	138	22	--	--	72	--	--	10	--	--
Winnebago	--	--	--	1	110	50	--	--	76	16	--	92	--	5
Total	465	6	151	36	2,233	1,043	27	10	2,286	845	41	2,073	421	348
State total	1,291	9,757	15,289	32,627	66,723	40,666	5,815	535	19,323	313,246	559	34,233	1,510	22,454

(Table 21 continued on next page)

(Table 21 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	782	3	124	1	5,683	984	698	3	--	103	24,612
Forest	749	9	600	8	8,447	1,550	1,009	24	--	101	47,109
Langlade	375	18	238	20	6,640	1,811	2,519	74	--	138	25,675
Lincoln	210	5	227	5	3,902	1,990	3,033	100	--	57	30,171
Marinette	497	--	106	2	5,085	2,492	5,326	163	--	104	45,372
Menominee	976	--	279	77	6,918	649	896	112	--	163	26,743
Oconto	333	18	180	10	3,211	2,138	3,103	361	--	82	29,704
Oneida	383	13	223	11	4,082	1,652	1,969	41	--	43	41,090
Shawano	141	1	208	33	4,496	1,327	4,110	360	--	151	17,936
Vilas	414	5	145	5	3,414	948	1,632	36	--	52	35,323
Total	4,860	72	2,330	172	51,878	15,541	24,295	1,274	--	994	323,735
NORTHWEST UNIT											
Ashland	425	4	156	5	3,936	1,014	2,676	152	--	21	23,414
Barron	--	--	67	4	829	378	4,456	1,054	--	4	21,058
Bayfield	82	--	22	--	1,063	779	3,190	4	--	--	41,799
Burnett	--	--	16	1	195	160	1,271	270	--	2	13,705
Douglas	28	--	6	--	173	454	409	--	--	--	21,432
Iron	456	9	157	11	2,545	709	494	15	--	37	16,822
Polk	--	--	39	1	333	265	2,384	464	--	1	8,340
Price	468	4	230	16	4,852	2,548	836	88	--	46	25,655
Rusk	75	--	78	13	1,674	1,074	2,958	290	--	20	23,345
Sawyer	328	--	179	--	4,268	1,351	3,729	252	--	26	39,401
Taylor	202	5	205	6	2,612	2,199	1,475	317	--	6	19,507
Washburn	19	--	30	--	420	396	1,980	373	--	10	18,881
Total	2,083	22	1,185	57	22,900	11,327	25,858	3,279	--	173	273,359
CENTRAL UNIT											
Adams	14	5	4	--	6	17	763	215	--	1	7,082
Chippewa	89	--	49	2	1,700	1,074	6,031	1,701	--	20	25,587
Clark	130	--	185	1	1,077	1,268	4,946	1,760	--	31	23,200
Eau Claire	23	--	15	2	101	135	1,861	1,048	--	10	7,296
Jackson	56	--	35	16	125	495	5,097	1,537	--	57	15,403
Juneau	34	2	48	21	323	323	3,840	1,155	--	32	11,770
Marathon	343	--	403	25	3,977	2,054	4,598	1,072	--	36	28,996
Marquette	14	2	9	--	134	47	884	552	--	2	4,206
Monroe	--	2	92	84	689	355	7,861	1,658	5	39	13,414
Portage	48	--	17	10	861	545	3,170	833	1	9	12,097
Waupaca	47	--	47	34	1,750	1,104	4,422	575	1	33	12,982
Waushara	21	--	11	5	281	176	1,816	621	1	3	9,192
Wood	58	--	53	--	801	989	3,058	974	--	14	16,476
Total	877	11	968	200	11,825	8,582	48,347	13,701	8	287	187,701

(Table 21 continued on next page)

(Table 21 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	1	77	50	131	226	423	9,320	1,930	3	106	17,235
Crawford	--	--	154	77	667	272	4,679	1,249	21	47	7,723
Dunn	3	14	138	16	709	759	5,076	1,227	--	62	14,574
Grant	--	19	144	70	713	183	4,277	1,959	248	65	8,453
Iowa	--	1	60	49	294	91	1,800	1,001	466	58	4,329
Lacrosse	--	165	128	93	303	302	8,759	1,818	3	13	12,415
Lafayette	--	--	--	2	10	--	108	360	--	5	532
Pepin	1	48	94	24	213	180	4,053	599	4	42	6,406
Pierce	--	39	102	32	458	205	2,868	650	--	68	5,349
Richland	--	1	160	75	1,584	403	4,795	2,083	432	62	10,580
St. Croix	--	2	35	8	171	186	1,411	452	--	45	3,203
Sauk	--	2	132	21	514	853	8,264	2,042	154	95	13,719
Trempealeau	1	22	41	35	77	255	9,111	1,781	5	49	13,044
Vernon	--	143	175	92	867	290	9,204	2,615	84	58	14,363
Total	6	533	1,413	725	6,806	4,402	73,725	19,766	1,420	775	131,925
SOUTHEAST UNIT											
Brown	3	54	12	37	342	376	1,133	288	1	--	3,127
Calumet	--	61	5	18	183	235	721	262	1	--	1,908
Columbia	--	--	23	37	98	78	1,332	890	4	71	3,604
Dane	--	3	39	37	30	57	751	577	265	79	1,953
Dodge	--	--	1	--	51	--	87	144	2	5	302
Door	21	36	2	1	273	211	211	75	1	23	1,710
Fond duLac	--	1	33	24	238	158	1,646	640	1	1	3,836
Green	--	--	29	2	134	--	320	339	8	28	926
Green Lake	--	--	--	--	6	2	75	16	--	--	243
Jefferson	--	--	18	8	252	91	1,028	724	1	35	2,393
Kenosha	--	--	4	--	--	2	13	14	1	2	49
Kewaunee	--	27	28	5	336	409	643	147	--	--	2,218
Manitowoc	4	389	48	31	536	566	848	349	--	--	4,406
Outagamie	20	19	37	17	578	548	1,244	397	1	4	3,860
Ozaukee	--	--	--	--	52	91	281	52	--	--	609
Racine	--	2	5	--	1	--	82	59	2	5	234
Rock	--	--	21	15	--	--	495	341	11	32	957
Sheboygan	--	2	15	21	361	266	949	351	1	--	2,508
Walworth	--	10	21	--	--	--	313	229	2	27	675
Washington	--	--	13	7	311	800	1,302	231	--	--	3,026
Waukesha	--	--	7	--	45	--	392	194	7	3	890
Winnebago	--	4	--	5	58	106	504	197	1	--	1,225
Total	48	608	361	265	3,885	3,996	14,370	6,516	310	315	40,659
State total	7,874	1,246	6,257	1,419	97,294	43,848	186,595	44,536	1,738	2,544	957,379

1/ International 1/4-inch rule.

Table 22.--Logging residue from timberland generated during industrial roundwood production by Forest Survey Unit, county, and species group, Wisconsin, 1988

(In thousand cubic feet)

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
NORTHEAST UNIT														
Florence	--	150	140	246	72	25	134	7	45	1,613	5	160	3	336
Forest	3	220	113	159	343	70	174	4	167	3,003	1	317	10	507
Langlade	--	44	5	94	85	19	14	3	140	1,551	3	184	8	369
Lincoln	1	87	87	103	66	50	34	7	241	2,506	1	236	1	277
Marinette	27	129	32	613	209	49	68	7	101	3,273	13	95	14	798
Menominee	6	5	851	43	63	133	--	--	52	399	--	191	32	57
Oconto	4	14	10	166	293	32	2	--	78	1,866	4	108	20	435
Oneida	1	195	26	513	360	182	146	8	150	2,608	3	178	1	926
Shawano	10	13	28	9	69	39	1	--	108	393	--	177	32	55
Vilas	1	71	16	415	334	251	47	--	42	2,562	1	98	4	661
Total	53	928	1,308	2,361	1,894	850	620	36	1,124	19,774	31	1,744	125	4,421
NORTHWEST UNIT														
Ashland	2	117	5	120	100	25	140	8	118	1,509	1	143	--	355
Barron	--	--	--	7	39	44	--	--	32	1,384	--	84	--	135
Bayfield	--	82	4	777	452	98	14	--	65	3,392	46	39	--	965
Burnett	--	3	--	555	246	41	5	--	13	1,021	--	4	--	85
Douglas	--	274	1	465	388	13	29	--	89	1,634	23	11	--	396
Iron	--	16	3	60	59	29	7	--	47	1,448	5	93	3	365
Polk	--	--	--	10	16	7	--	--	11	697	--	6	--	39
Price	--	102	23	100	73	17	56	17	249	1,872	1	159	--	528
Rusk	--	1	1	1	37	23	1	4	129	1,933	--	161	--	201
Sawyer	--	47	7	65	165	78	84	4	267	3,339	--	269	--	789
Taylor	1	92	24	1	105	18	28	6	171	1,388	1	180	1	227
Washburn	--	8	--	193	138	57	5	8	80	1,762	--	53	--	223
Total	3	742	68	2,354	1,818	450	369	47	1,271	21,379	77	1,202	4	4,308
CENTRAL UNIT														
Adams	--	--	--	413	389	78	--	--	1	81	--	4	--	3
Chippewa	--	3	3	56	49	242	6	5	105	1,155	--	133	41	136
Clark	1	10	--	160	93	153	--	--	151	1,416	--	79	--	163
Eau Claire	--	--	--	108	63	115	--	--	7	250	--	12	--	27
Jackson	--	--	--	580	148	173	2	3	3	403	--	16	--	65
Juneau	--	--	--	542	215	110	--	--	13	88	--	17	--	27
Marathon	3	49	36	23	72	245	16	1	177	1,570	--	166	4	81
Marquette	--	--	--	46	183	60	--	--	3	16	--	4	--	20
Monroe	--	--	--	191	91	24	--	2	17	83	--	32	--	21
Portage	11	13	5	248	215	122	10	1	39	241	--	28	--	47
Waupaca	--	5	3	9	180	42	--	--	51	288	--	76	3	14
Waushara	--	--	--	94	451	124	1	--	9	42	--	24	--	8
Wood	--	--	1	222	86	143	2	--	39	1,219	--	27	--	78
Total	15	80	48	2,692	2,235	1,631	37	12	615	6,852	--	618	48	690

(Table 22 continued on next page)

(Table 22 continued)

SOUTHWEST UNIT

Unit and county	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
Buffalo	--	--	--	5	16	1	--	--	14	271	--	62	--	13
Crawford	--	--	--	--	1	--	--	--	19	6	--	39	--	--
Dunn	--	--	--	81	249	63	--	--	47	133	--	109	--	13
Grant	--	--	--	3	18	1	--	--	30	9	--	34	--	--
Iowa	1	--	--	--	8	6	--	--	11	6	--	27	--	--
Lacrosse	--	--	--	38	33	3	2	--	12	2	--	32	--	--
Lafayette	--	--	--	--	--	--	--	--	--	--	--	4	--	--
Pepin	--	--	--	2	14	7	--	--	19	55	--	30	--	6
Pierce	--	--	--	--	--	--	--	--	9	62	--	38	--	7
Richland	--	--	--	--	6	2	--	--	34	28	--	44	--	--
St. Croix	--	--	--	2	10	6	--	--	11	52	--	24	--	2
Sauk	--	--	--	6	99	8	--	--	28	32	--	27	--	--
Trempealeau	--	--	--	4	60	11	--	--	7	41	--	27	--	1
Vernon	--	--	--	--	5	2	2	--	16	10	--	63	--	--
Total	1	--	--	141	519	110	4	--	257	707	--	560	--	42
SOUTHEAST UNIT														
Brown	--	--	2	--	5	6	--	--	39	16	--	21	1	4
Calumet	--	--	--	--	4	7	--	--	12	3	--	15	3	1
Columbia	--	--	--	3	106	9	--	--	12	2	--	4	--	9
Dane	1	--	--	--	--	--	--	--	1	1	--	7	--	--
Dodge	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Door	11	--	4	--	2	12	1	1	13	10	4	6	6	16
Fond duLac	--	--	--	--	58	9	1	--	16	1	--	21	1	1
Green	--	--	--	4	--	--	--	--	2	--	--	4	--	--
Green Lake	--	--	--	2	10	4	--	--	--	--	--	1	--	--
Jefferson	--	--	--	--	--	--	--	--	7	--	--	19	1	1
Kenosha	--	--	--	--	1	--	--	--	--	--	--	--	--	--
Kewaunee	6	--	2	--	--	1	--	--	28	7	1	11	10	4
Manitowoc	27	--	2	--	10	23	--	--	46	27	--	27	12	8
Outagamie	--	--	--	--	9	4	--	--	27	29	--	37	1	8
Ozaukee	--	--	--	--	1	--	--	--	3	--	--	9	5	--
Racine	--	--	--	--	--	--	--	--	8	--	--	1	--	--
Rock	--	--	--	--	--	--	--	--	--	--	--	3	--	--
Sheboygan	--	--	--	--	2	4	--	--	30	1	--	19	7	--
Walworth	--	--	--	--	4	--	--	--	--	--	--	3	--	--
Washington	--	--	--	--	--	--	--	--	19	1	--	19	4	1
Waukesha	--	--	--	--	18	3	--	--	10	--	--	1	--	--
Winnebago	--	--	--	--	12	4	--	--	9	1	--	11	--	--
Total	45	--	10	9	242	86	2	1	282	99	5	239	51	53
State total	117	1,750	1,434	7,557	6,708	3,127	1,032	96	3,549	48,811	113	4,363	228	9,514

(Table 22 continued on next page)

(Table 22 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
NORTHEAST UNIT											
Florence	145	--	37	--	674	207	82	--	--	28	4,109
Forest	146	1	171	--	1,021	311	111	2	--	27	6,881
Langlade	97	2	52	1	853	321	254	7	--	47	4,153
Lincoln	47	--	64	--	496	352	323	10	--	22	5,011
Marinette	130	--	34	--	668	405	544	15	--	39	7,263
Menominee	157	--	70	9	743	139	99	11	--	41	3,101
Oconto	82	2	52	1	400	317	323	38	--	22	4,269
Oneida	84	1	51	1	526	328	238	4	--	14	6,544
Shawano	27	--	48	4	455	195	407	35	--	24	2,129
Vilas	92	--	34	--	465	189	177	4	--	17	5,481
Total	1,007	6	613	16	6,301	2,764	2,558	126	--	281	48,941
NORTHWEST UNIT											
Ashland	80	--	45	--	494	192	299	30	--	7	3,790
Barron	--	--	8	--	76	47	460	117	--	1	2,434
Bayfield	17	--	6	--	141	119	375	--	--	--	6,592
Burnett	--	--	1	--	23	24	140	28	--	--	2,189
Douglas	6	--	2	--	20	79	33	--	--	--	3,463
Iron	87	1	24	1	315	128	62	1	--	14	2,768
Polk	--	--	5	--	30	31	244	49	--	--	1,145
Price	101	--	70	1	635	482	116	9	--	17	4,628
Rusk	17	--	22	1	215	172	329	36	--	7	3,291
Sawyer	105	--	53	--	587	292	446	34	--	6	6,637
Taylor	49	--	61	--	350	427	163	33	--	2	3,328
Washburn	4	--	7	--	59	81	233	49	--	3	2,963
Total	466	1	304	3	2,945	2,074	2,900	386	--	57	43,228
CENTRAL UNIT											
Adams	1	--	--	--	1	3	133	29	--	--	1,136
Chippewa	22	--	13	--	183	156	628	179	--	3	3,118
Clark	28	--	55	--	136	227	539	202	--	10	3,423
Eau Claire	3	--	3	--	11	24	203	113	--	2	941
Jackson	8	--	7	1	20	110	597	182	--	11	2,329
Juneau	4	--	9	2	39	48	451	149	--	5	1,719
Marathon	69	--	132	2	435	319	495	115	--	7	4,017
Marquette	1	--	2	--	20	11	118	79	--	--	563
Monroe	--	--	13	10	67	53	808	175	--	7	1,594
Portage	11	--	1	1	96	78	377	122	--	2	1,668
Waupaca	6	--	12	4	165	150	447	60	--	7	1,522
Waushara	3	--	3	--	33	26	189	64	--	1	1,072
Wood	13	--	13	--	106	168	368	130	--	3	2,618
Total	169	--	263	20	1,312	1,373	5,353	1,599	--	58	25,720

(Table 22 continued on next page)

(Table 22 continued)

Unit and county	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	O. hard-woods	All species
SOUTHWEST UNIT											
Buffalo	--	9	6	15	20	43	941	197	--	13	1,626
Crawford	--	--	19	9	59	32	471	125	2	5	787
Dunn	1	1	16	2	66	94	511	127	--	7	1,520
Grant	--	2	16	10	62	22	431	193	30	8	869
Iowa	--	--	7	6	27	11	183	94	56	7	450
Lacrosse	--	15	15	11	27	29	847	185	--	1	1,252
Lafayette	--	--	--	--	1	--	11	30	--	--	46
Pepin	--	5	11	5	20	22	411	62	--	5	674
Pierce	--	4	12	4	41	24	293	67	--	8	569
Richland	--	--	19	10	142	50	489	202	51	7	1,084
St. Croix	--	--	4	--	14	22	144	47	--	5	343
Sauk	--	--	16	2	45	102	841	208	19	11	1,444
Trempealeau	--	3	5	4	6	22	930	182	--	6	1,309
Vernon	--	12	21	11	77	35	936	266	10	7	1,473
Total	1	51	167	89	607	508	7,439	1,985	168	90	13,446
SOUTHEAST UNIT											
Brown	--	6	1	4	28	43	115	29	--	--	320
Calumet	--	5	3	2	19	31	74	26	--	--	205
Columbia	--	--	3	4	13	12	148	101	--	10	436
Dane	--	--	4	4	3	7	76	59	32	9	204
Dodge	--	--	--	--	5	--	9	15	--	--	29
Door	2	4	--	--	24	27	21	8	--	3	175
Fond duLac	--	--	5	5	20	22	169	66	--	--	395
Green	--	--	5	--	12	--	33	34	--	4	98
Green Lake	--	--	--	--	--	1	6	1	--	--	25
Jefferson	--	--	2	--	23	11	105	74	--	4	247
Kenosha	--	--	--	--	--	--	1	1	--	--	3
Kewaunee	--	4	4	--	29	51	59	15	--	--	232
Manitowoc	--	46	10	4	51	73	86	35	--	--	487
Outagamie	5	2	5	2	60	71	128	40	--	2	430
Ozaukee	--	--	--	--	5	11	29	5	--	--	68
Racine	--	--	--	--	--	--	9	5	--	--	23
Rock	--	--	2	1	--	--	51	34	1	4	96
Sheboygan	--	--	1	2	33	33	97	35	--	--	264
Walworth	--	1	2	--	--	--	33	25	--	4	72
Washington	--	--	1	--	28	96	134	25	--	--	328
Waukesha	--	--	--	--	4	--	40	20	--	--	96
Winnebago	--	--	--	--	5	13	52	20	--	--	127
Total	7	68	48	28	362	502	1,475	673	33	40	4,360
State total	1,650	126	1,395	156	11,527	7,221	19,725	4,769	201	526	135,695

Table 23.--Residue produced at primary wood-using mills by type of material, type of use, and county, Wisconsin, 1988

(In thousand tons, green weight)

NORTHEAST UNIT

County and type of use	Total		Wood residue: Coarse 1/		Wood residue: Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Florence								
Fiber products	0.75	4.93	0.58	4.42	0.17	0.51	--	--
Industrial fuel	0.17	1.76	--	--	0.17	1.76	0.25	1.88
Miscellaneous 3/	--	0.31	--	--	--	0.31	--	--
Total	0.92	7.00	0.58	4.42	0.34	2.58	0.25	1.88
Forest								
Fiber products	7.22	53.71	6.02	41.59	1.20	12.12	--	--
Charcoal	--	1.58	--	0.02	--	1.56	--	0.01
Industrial fuel	3.43	18.29	0.82	6.36	2.61	11.93	2.85	19.49
Domestic fuel	0.18	1.36	0.18	1.36	--	--	0.07	0.57
Miscellaneous 3/	0.27	3.09	--	--	0.27	3.09	--	0.91
Not used	0.24	0.01	0.15	--	0.09	0.01	0.05	--
Total	11.34	78.04	7.17	49.33	4.17	28.71	2.97	20.98
Langlade								
Fiber products	0.35	20.57	0.22	16.44	0.13	4.13	--	--
Industrial fuel	0.10	1.87	0.10	0.55	--	1.32	0.12	6.26
Domestic fuel	0.09	2.04	0.09	2.04	--	--	0.04	0.87
Miscellaneous 3/	0.10	5.77	--	--	0.10	5.77	0.01	0.90
Not used	--	0.22	--	0.22	--	--	--	0.09
Total	0.64	30.47	0.41	19.25	0.23	11.22	0.17	8.12
Lincoln								
Fiber products	--	4.23	--	4.23	--	--	--	--
Industrial fuel	0.08	2.51	--	--	0.08	2.51	--	1.80
Domestic fuel	0.33	0.66	0.33	0.66	--	--	0.06	0.25
Miscellaneous 3/	0.11	0.40	--	0.03	0.11	0.37	--	0.01
Not used	0.35	0.38	0.22	0.25	0.13	0.13	0.15	0.12
Total	0.87	8.18	0.55	5.17	0.32	3.01	0.21	2.18
Marinette								
Fiber products	0.07	16.19	0.05	13.64	0.02	2.55	--	--
Industrial fuel	3.51	34.95	2.10	20.35	1.41	14.60	0.90	18.19
Domestic fuel	0.87	2.87	0.85	2.86	0.02	0.01	0.10	0.84
Miscellaneous 3/	0.40	9.28	0.06	--	0.34	9.28	0.21	--
Not used	0.01	0.58	0.01	0.27	--	0.31	0.29	1.14
Total	4.86	63.87	3.07	37.12	1.79	26.75	1.50	20.17
Menominee								
Fiber products	16.06	20.47	10.15	12.94	5.91	7.53	--	--
Industrial fuel	--	--	--	--	--	--	4.32	5.49
Total	16.06	20.47	10.15	12.94	5.91	7.53	4.32	5.49

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue						Bark	
	Total		Coarse 1/		Fine 2/			
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Oconto								
Fiber products	0.68	18.09	0.68	16.62	--	1.47	0.29	--
Charcoal	--	1.47	--	--	--	1.47	--	--
Industrial fuel	0.29	9.61	0.29	2.30	--	7.31	0.12	*4.17*
Domestic fuel	0.07	0.33	0.07	0.30	--	0.03	--	0.07
Miscellaneous 3/	0.14	4.06	--	0.76	0.14	3.30	0.02	4.80
Not used	0.45	0.01	--	0.01	0.45	--	--	--
Total	1.63	33.57	1.04	19.99	0.59	13.58	0.43	9.04
Onelda								
Fiber products	--	52.81	--	33.38	--	19.43	--	--
Industrial fuel	0.06	0.49	0.05	0.25	0.01	0.24	0.02	14.28
Domestic fuel	0.09	0.59	0.09	0.59	--	--	0.01	0.23
Miscellaneous 3/	--	0.20	--	--	--	0.20	--	--
Not used	0.34	0.04	0.17	--	0.17	0.04	0.10	0.02
Total	0.49	54.13	0.31	34.22	0.18	19.91	0.13	14.53
Shawano								
Fiber products	0.95	31.01	0.95	31.01	--	--	--	--
Industrial fuel	0.08	15.88	0.02	1.97	0.06	13.91	0.15	10.58
Domestic fuel	0.12	0.61	0.12	0.61	--	--	0.05	0.09
Miscellaneous 3/	0.66	10.77	--	1.46	0.66	9.31	0.26	4.93
Not used	0.12	0.52	0.12	0.52	--	--	0.04	0.22
Total	1.93	58.79	1.21	35.57	0.72	23.22	0.50	15.82
Vilas								
Fiber products	42.66	54.77	30.19	35.74	12.47	19.03	--	--
Charcoal	--	0.74	--	0.27	--	0.47	--	--
Industrial fuel	5.13	1.74	--	--	5.13	1.74	12.65	15.32
Domestic fuel	0.02	0.44	0.02	0.44	--	--	--	--
Miscellaneous 3/	0.01	--	--	--	0.01	--	--	--
Not used	0.70	0.73	0.45	0.47	0.25	0.26	0.20	0.39
Total	48.52	58.42	30.66	36.92	17.86	21.50	12.85	15.71
All counties								
Fiber products	68.74	276.78	48.84	210.01	19.90	66.77	0.29	--
Charcoal	--	3.79	--	0.29	--	3.50	--	0.01
Industrial fuel	12.85	87.10	3.38	31.78	9.47	55.32	21.38	97.46
Domestic fuel	1.77	8.90	1.75	8.86	0.02	0.04	0.33	2.92
Miscellaneous 3/	1.69	33.88	0.06	2.25	1.63	31.63	0.50	11.55
Not used	2.21	2.49	1.12	1.74	1.09	0.75	0.83	1.98
Total	87.26	412.94	55.15	254.93	32.11	158.01	23.33	113.92

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue						Bark	
	Total		Coarse 1/		Fine 2/			
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
NORTHWEST UNIT								
Ashland								
Fiber products	0.26	20.16	0.26	13.44	--	6.72	--	--
Industrial fuel	0.74	19.56	0.19	7.79	0.55	11.77	0.24	11.41
Domestic fuel	0.36	0.01	0.36	0.01	--	--	0.04	--
Miscellaneous 3/	--	1.83	--	--	--	1.83	--	--
Not used	0.22	0.01	0.06	0.01	0.16	--	0.09	--
Total	1.58	41.57	0.87	21.25	0.71	20.32	0.37	11.41
Barron								
Fiber products	--	8.32	--	8.32	--	--	--	--
Industrial fuel	--	18.98	--	6.94	--	12.04	--	7.25
Domestic fuel	0.42	1.35	0.42	1.35	--	--	0.17	0.26
Miscellaneous 3/	1.50	6.27	--	0.76	1.50	5.51	0.93	0.20
Not used	2.20	0.03	2.19	0.01	0.01	0.02	--	1.93
Total	4.12	34.95	2.61	17.38	1.51	17.57	1.10	9.64
Bayfield								
Fiber products	--	5.02	--	5.02	--	--	--	--
Industrial fuel	0.20	4.15	0.20	0.57	--	3.58	--	2.35
Domestic fuel	0.23	1.98	0.19	1.61	0.04	0.37	0.05	0.70
Miscellaneous 3/	0.06	0.06	--	--	0.06	0.06	--	--
Not used	0.86	0.37	0.46	0.11	0.40	0.26	0.33	0.07
Total	1.35	11.58	0.85	7.31	0.50	4.27	0.38	3.12
Burnett								
Fiber products	0.03	6.67	0.03	6.67	--	--	--	--
Charcoal	0.54	1.30	0.54	0.91	--	0.39	0.23	0.39
Industrial fuel	--	0.39	--	--	--	0.39	0.01	2.69
Domestic fuel	0.37	0.36	0.37	0.36	--	--	0.16	0.15
Miscellaneous 3/	0.51	3.79	--	--	0.51	3.79	--	0.14
Not used	2.78	0.05	1.74	--	1.04	0.05	2.19	--
Total	4.23	12.56	2.68	7.94	1.55	4.62	2.59	3.37
Douglas								
Industrial fuel	3.86	2.75	2.44	1.74	1.42	1.01	1.04	0.74
Domestic fuel	0.17	0.22	0.16	0.22	0.01	--	0.05	--
Miscellaneous 3/	0.01	--	--	--	0.01	--	--	--
Not used	0.06	0.11	--	--	0.06	0.11	0.02	0.08
Total	4.10	3.08	2.60	1.96	1.50	1.12	1.11	0.82
Iron								
Not used	0.05	--	0.03	--	0.02	--	0.01	--
Total	0.05	--	0.03	--	0.02	--	0.01	--
Polk								
Charcoal	--	2.47	--	2.47	--	--	--	1.05
Industrial fuel	--	2.45	--	2.45	--	--	--	1.04
Domestic fuel	0.08	0.49	0.08	0.49	--	--	0.03	0.21
Miscellaneous 3/	0.05	2.83	--	--	0.05	2.83	--	--
Not used	--	0.32	--	--	--	0.32	--	--
Total	0.13	8.56	0.08	5.41	0.05	3.15	0.03	2.30

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Price								
Fiber products	--	16.95	--	12.75	--	4.20	--	--
Industrial fuel	--	4.01	--	2.19	--	1.82	--	6.36
Domestic fuel	0.08	0.71	0.08	0.71	--	--	0.02	0.30
Miscellaneous 3/	0.04	3.09	--	--	0.04	3.09	--	--
Not used	--	--	--	--	--	--	--	--
Total	0.12	24.76	0.08	15.65	0.04	9.11	0.02	6.66
Rusk								
Fiber products	0.03	17.02	0.03	15.62	--	1.40	--	--
Charcoal	--	0.70	--	--	--	0.70	--	--
Industrial fuel	0.02	4.76	--	--	0.02	4.76	0.01	6.62
Domestic fuel	0.05	0.46	0.05	0.46	--	--	0.02	0.20
Miscellaneous 3/	0.03	2.45	--	--	0.03	2.45	--	--
Not used	0.02	0.05	0.02	0.01	--	0.04	--	0.03
Total	0.15	25.44	0.10	16.09	0.05	9.35	0.03	6.85
Sawyer								
Fiber products	0.03	7.67	--	5.69	0.03	1.98	--	--
Industrial fuel	--	3.87	--	1.73	--	2.14	--	3.85
Domestic fuel	0.22	1.97	0.22	1.97	--	--	0.09	0.14
Miscellaneous 3/	0.03	1.19	--	--	0.03	1.19	--	--
Not used	0.32	0.23	0.16	0.05	0.16	0.18	0.08	0.03
Total	0.60	14.93	0.38	9.44	0.22	5.49	0.17	4.02
Taylor								
Fiber products	0.53	0.24	--	--	0.53	0.24	--	--
Industrial fuel	0.18	0.24	--	--	0.18	0.24	--	--
Domestic fuel	1.48	3.14	1.48	3.14	--	--	0.64	1.33
Miscellaneous 3/	0.20	1.33	--	--	0.20	1.33	0.02	0.01
Not used	0.06	--	0.06	--	--	--	--	--
Total	2.45	4.95	1.54	3.14	0.91	1.81	0.66	1.34
Washburn								
Fiber products	--	2.68	--	2.68	--	--	--	--
Industrial fuel	3.03	7.99	2.35	3.28	0.68	4.71	1.00	3.12
Domestic fuel	0.46	0.22	0.46	0.22	--	--	0.19	0.11
Miscellaneous 3/	0.64	1.33	--	1.07	0.64	0.26	--	--
Not used	0.73	2.12	0.27	0.84	0.46	1.28	0.11	0.68
Total	4.86	14.34	3.08	8.09	1.78	6.25	1.30	3.91
All counties								
Fiber products	0.88	84.73	0.32	70.19	0.56	14.54	--	--
Charcoal	0.54	4.47	0.54	3.38	--	1.09	0.23	1.44
Industrial fuel	8.03	69.15	5.18	26.69	2.85	42.46	2.30	45.43
Domestic fuel	3.92	10.91	3.87	10.54	0.05	0.37	1.46	3.40
Miscellaneous 3/	3.07	24.17	--	1.83	3.07	22.34	0.95	0.35
Not used	7.30	3.29	4.99	1.03	2.31	2.26	2.83	2.82
Total	23.74	196.72	14.90	113.66	8.84	83.06	7.77	53.44

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
CENTRAL UNIT								
Adams								
Industrial fuel	--	6.30	--	4.36	--	1.94	--	--
Domestic fuel	--	0.41	--	0.28	--	0.13	--	--
Miscellaneous 3/	--	0.54	--	--	--	0.54	--	1.97
Not used	--	0.08	--	--	--	0.08	--	--
Total	--	7.33	--	4.64	--	2.69	--	1.97
Chippewa								
Fiber products	2.77	26.21	2.77	24.89	--	1.32	--	--
Industrial fuel	1.61	21.54	--	3.18	1.61	18.36	1.18	12.31
Domestic fuel	0.04	0.29	0.04	0.29	--	--	0.01	0.02
Miscellaneous 3/	0.03	1.59	0.01	0.01	0.02	1.58	--	0.01
Not used	--	5.16	--	4.44	--	0.72	--	2.41
Total	4.45	54.79	2.82	32.81	1.63	21.98	1.19	14.75
Clark								
Fiber products	--	3.32	--	2.93	--	0.39	--	1.12
Industrial fuel	0.43	8.31	0.43	3.67	--	4.64	0.18	2.92
Domestic fuel	1.15	6.69	1.15	6.52	--	0.17	0.49	1.21
Miscellaneous 3/	0.92	2.42	--	--	0.92	2.42	--	0.32
Total	2.50	20.74	1.58	13.12	0.92	7.62	0.67	5.57
Eau Claire								
Domestic fuel	0.01	0.05	0.01	0.05	--	--	--	*0.02*
Miscellaneous 3/	0.02	0.05	0.01	0.03	0.01	0.02	0.01	0.01
Not used	--	0.03	--	--	--	0.03	--	--
Total	0.03	0.13	0.02	0.08	0.01	0.05	0.01	0.03
Jackson								
Fiber products	--	0.81	--	--	--	0.81	--	1.57
Industrial fuel	--	1.74	--	0.93	--	0.81	--	--
Domestic fuel	0.01	0.94	0.01	0.94	--	--	--	0.01
Miscellaneous 3/	0.20	1.09	0.12	--	0.08	1.09	0.05	0.39
Not used	--	2.78	--	2.78	--	--	--	--
Total	0.21	7.36	0.13	4.65	0.08	2.71	0.05	1.97
Juneau								
Fiber products	--	0.33	--	--	--	0.33	--	--
Industrial fuel	--	0.33	--	--	--	0.33	--	--
Domestic fuel	0.09	3.03	0.09	3.03	--	--	--	0.40
Miscellaneous 3/	0.05	1.55	--	--	0.05	1.55	0.04	0.89
Not used	--	1.05	--	0.94	--	0.11	--	0.40
Total	0.14	6.29	0.09	3.97	0.05	2.32	0.04	1.69

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Marathon								
Fiber products	3.10	15.63	3.10	13.85	--	1.78	--	0.79
Charcoal	--	0.27	--	--	--	0.27	--	0.20
Industrial fuel	0.04	6.25	--	2.66	0.04	3.59	0.38	5.08
Domestic fuel	0.43	2.96	0.41	2.36	0.02	0.60	0.12	0.54
Miscellaneous 3/	2.00	6.30	0.03	0.22	1.97	6.08	0.73	1.90
Not used	--	0.01	--	--	--	0.01	--	--
Total	5.57	31.42	3.54	19.09	2.03	12.33	1.23	8.51
Marquette								
Industrial fuel	--	0.04	--	0.04	--	--	--	--
Domestic fuel	0.39	0.16	0.39	0.16	--	--	0.17	0.06
Miscellaneous 3/	0.26	0.09	--	--	0.26	0.09	--	--
Not used	0.05	0.03	0.05	--	--	0.03	0.03	0.03
Total	0.70	0.32	0.44	0.20	0.26	0.12	0.20	0.09
Monroe								
Industrial fuel	--	0.55	--	--	--	0.55	--	--
Domestic fuel	0.27	1.66	0.27	1.66	--	--	0.12	0.14
Miscellaneous 3/	0.16	0.19	--	--	0.16	0.19	--	0.57
Not used	--	0.23	--	--	--	0.23	--	--
Total	0.43	2.63	0.27	1.66	0.16	0.97	0.12	0.71
Portage								
Fiber products	0.55	4.65	0.20	3.82	0.35	0.83	--	--
Industrial fuel	--	--	--	--	--	--	0.09	1.62
Domestic fuel	0.44	0.61	0.44	0.61	--	--	0.19	0.26
Miscellaneous 3/	0.40	2.57	0.01	--	0.39	2.57	0.01	0.60
Not used	0.94	1.42	0.81	1.42	0.13	--	0.30	--
Total	2.33	9.25	1.46	5.85	0.87	3.40	0.59	2.48
Waupaca								
Fiber products	0.07	6.65	0.07	6.65	--	--	--	--
Industrial fuel	0.04	8.37	--	0.14	0.04	8.23	0.03	4.25
Domestic fuel	0.10	4.76	0.10	4.76	--	--	0.04	0.92
Miscellaneous 3/	0.06	1.26	--	--	0.06	1.26	--	0.57
Not used	0.01	--	0.01	--	--	--	--	--
Total	0.28	21.04	0.18	11.55	0.10	9.49	0.07	5.74
Waushara								
Fiber products	--	--	--	--	--	--	--	--
Industrial fuel	--	0.02	--	0.02	--	--	--	0.01
Domestic fuel	0.77	1.47	0.77	1.46	--	0.01	0.02	0.62
Miscellaneous 3/	0.44	0.84	--	--	0.44	0.84	0.31	--
Not used	0.03	--	0.01	--	0.02	--	0.01	--
Total	1.24	2.33	0.78	1.48	0.46	0.85	0.34	0.63

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Wood								
Fiber products	24.54	9.09	19.01	9.09	5.53	--	--	--
Industrial fuel	--	--	--	--	--	--	4.04	1.93
Domestic fuel	--	0.02	--	0.02	--	--	--	0.01
Miscellaneous 3/	5.59	5.30	0.04	--	5.55	5.30	4.06	1.93
Total	30.13	14.41	19.05	9.11	11.08	5.30	8.10	3.87
All counties								
Fiber products	31.03	66.69	25.15	61.23	5.88	5.46	--	3.48
Charcoal	--	0.27	--	--	--	0.27	--	0.20
Industrial fuel	2.12	53.45	0.43	15.00	1.69	38.45	5.90	28.12
Domestic fuel	3.70	23.05	3.68	22.14	0.02	0.91	1.16	4.21
Miscellaneous 3/	10.13	23.79	0.22	0.26	9.91	23.53	5.21	9.16
Not used	1.03	10.79	0.88	9.58	0.15	1.21	0.34	2.84
Total	48.01	178.04	30.36	108.21	17.65	69.83	12.61	48.01
SOUTHWEST UNIT								
Buffalo								
Fiber products	--	10.84	--	10.84	--	--	--	--
Charcoal	--	2.31	--	2.31	--	--	--	--
Industrial fuel	--	6.96	--	1.12	--	5.84	--	2.94
Domestic fuel	--	5.55	--	5.55	--	--	--	0.32
Miscellaneous 3/	--	6.84	--	0.72	--	6.12	--	5.50
Total	--	32.50	--	20.54	--	11.96	--	8.76
Crawford								
Fiber products	--	27.46	--	23.69	--	3.77	--	--
Industrial fuel	--	4.68	--	--	--	4.68	--	2.05
Domestic fuel	--	0.53	--	0.53	--	--	--	--
Miscellaneous 3/	--	5.62	--	--	--	5.62	--	8.23
Not used	--	0.02	--	--	--	0.02	--	0.01
Total	--	38.31	--	24.22	--	14.09	--	10.29
Dunn								
Fiber products	2.19	6.91	--	6.91	2.19	--	--	--
Industrial fuel	4.92	1.17	4.92	--	--	1.17	2.09	1.59
Domestic fuel	1.02	6.28	1.02	6.08	--	0.20	0.38	--
Miscellaneous 3/	1.27	6.18	--	--	1.27	6.18	0.06	3.94
Total	9.40	20.54	5.94	12.99	3.46	7.55	2.53	5.53
Grant								
Domestic fuel	--	5.19	--	5.19	--	--	--	0.46
Miscellaneous 3/	0.01	8.45	--	3.33	0.01	5.12	--	3.45
Not used	0.02	2.79	0.02	1.85	--	0.94	0.01	0.49
Total	0.03	16.43	0.02	10.37	0.01	6.06	0.01	4.40

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Iowa								
Industrial fuel	0.01	0.19	--	--	0.01	0.19	--	0.23
Domestic fuel	0.02	0.55	0.02	0.55	--	--	--	--
Miscellaneous 3/	--	0.10	--	--	--	0.10	--	--
Not used	--	0.03	--	--	--	0.03	--	--
Total	0.03	0.87	0.02	0.55	0.01	0.32	--	0.23
Lacrosse								
Fiber products	--	43.36	--	43.22	--	0.14	--	--
Industrial fuel	--	25.84	--	0.62	--	25.22	--	13.14
Domestic fuel	--	4.73	--	4.73	--	--	--	0.02
Miscellaneous 3/	--	2.91	--	--	--	2.91	--	7.51
Not used	--	0.01	--	--	--	0.01	--	--
Total	--	76.85	--	48.57	--	28.28	--	20.67
Lafayette								
Domestic fuel	0.03	0.07	0.03	0.07	--	--	0.01	0.03
Miscellaneous 3/	0.02	0.04	--	--	0.02	0.04	--	--
Total	0.05	0.11	0.03	0.07	0.02	0.04	0.01	0.03
Pepin								
Charcoal	--	2.33	--	2.33	--	--	--	--
Industrial fuel	--	--	--	--	--	--	--	0.37
Domestic fuel	0.05	11.73	0.05	11.73	--	--	0.01	0.01
Miscellaneous 3/	0.02	8.18	--	--	0.02	8.18	0.01	5.60
Not used	0.01	0.01	--	--	0.01	0.01	--	--
Total	0.08	22.25	0.05	14.06	0.03	8.19	0.02	5.98
Pierce								
Fiber products	--	0.23	--	--	--	0.23	--	--
Charcoal	--	0.59	--	0.59	--	--	--	0.25
Industrial fuel	--	0.63	--	0.63	--	--	--	0.85
Domestic fuel	0.01	3.45	0.01	3.45	--	--	--	0.59
Miscellaneous 3/	0.01	2.49	--	--	0.01	2.49	0.01	0.30
Total	0.02	7.39	0.01	4.67	0.01	2.72	0.01	1.99
Richland								
Fiber products	--	5.03	--	5.03	--	--	--	--
Domestic fuel	0.01	2.32	0.01	2.32	--	--	--	0.75
Miscellaneous 3/	--	4.27	--	--	--	4.27	--	2.38
Total	0.01	11.62	0.01	7.35	--	4.27	--	3.13
St. Croix								
Not used	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Sauk								
Fiber products	--	2.30	--	2.30	--	--	--	--
Industrial fuel	--	0.16	--	--	--	0.16	--	--
Domestic fuel	0.14	10.98	0.14	10.98	--	--	0.06	1.55
Miscellaneous 3/	0.02	4.58	--	0.08	0.02	4.50	--	4.09
Not used	0.18	4.35	0.08	0.79	0.10	3.56	0.03	0.37
Total	0.34	22.37	0.22	14.15	0.12	8.22	0.09	6.01
Trempealeau								
Fiber products	--	13.11	--	13.11	--	--	--	--
Industrial fuel	--	11.21	--	4.34	--	6.87	--	1.00
Domestic fuel	0.02	4.84	0.02	4.84	--	--	--	0.02
Miscellaneous 3/	--	7.09	--	--	--	7.09	--	9.36
Not used	--	2.38	--	2.13	--	0.25	--	2.02
Total	0.02	38.63	0.02	24.42	--	14.21	--	12.40
Vernon								
Fiber products	--	3.26	--	3.26	--	--	--	--
Industrial fuel	--	0.26	--	0.26	--	--	--	0.11
Domestic fuel	--	1.75	--	1.75	--	--	--	0.33
Miscellaneous 3/	--	3.07	--	--	--	3.07	--	1.79
Total	--	8.34	--	5.27	--	3.07	--	2.23
All counties								
Fiber products	2.19	112.50	--	108.36	2.19	4.14	--	--
Charcoal	--	5.23	--	5.23	--	--	--	0.25
Industrial fuel	4.93	51.10	4.92	6.97	0.01	44.13	2.09	22.28
Domestic fuel	1.30	57.97	1.30	57.77	--	0.20	0.46	4.08
Miscellaneous 3/	1.35	59.82	--	4.13	1.35	55.69	0.08	52.15
Not used	0.21	9.59	0.10	4.77	0.11	4.82	0.04	2.89
Total	9.98	296.21	6.32	187.23	3.66	108.98	2.67	81.65
SOUTHEAST UNIT								
Brown								
Fiber products	--	4.88	--	4.88	--	--	--	--
Industrial fuel	--	0.16	--	0.06	--	0.10	--	0.04
Miscellaneous 3/	--	2.84	--	--	--	2.84	--	2.07
Total	--	7.88	--	4.94	--	2.94	--	2.11
Calumet								
Domestic fuel	--	0.16	--	0.16	--	--	--	0.07
Miscellaneous 3/	--	0.09	--	--	--	0.09	--	--
Total	--	0.25	--	0.16	--	0.09	--	0.07
Columbia								
Domestic fuel	--	0.20	--	0.20	--	--	--	0.08
Miscellaneous 3/	--	0.11	--	--	--	0.11	--	--
Not used	--	0.01	--	--	--	0.01	--	--
Total	--	0.32	--	0.20	--	0.12	--	0.08

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Dane								
Industrial fuel	--	0.07	--	0.07	--	--	--	0.12
Domestic fuel	--	1.73	--	1.73	--	--	--	*0.72*
Miscellaneous 3/	--	1.59	--	--	--	1.59	--	--
Not used	--	1.51	--	1.21	--	0.30	--	0.47
Total	--	4.90	--	3.01	--	1.89	--	1.31
Dodge								
Fiber products	--	4.36	--	4.36	--	--	--	--
Industrial fuel	0.01	0.01	0.01	0.01	--	--	--	--
Domestic fuel	--	0.78	--	0.78	--	--	--	--
Miscellaneous 3/	--	3.00	--	--	--	3.00	--	2.19
Not used	--	--	--	--	--	--	--	--
Total	0.01	8.15	0.01	5.15	--	3.00	--	2.19
Door								
Domestic fuel	0.33	0.27	0.33	0.27	--	--	0.10	0.11
Miscellaneous 3/	0.18	0.15	--	--	0.18	0.15	--	--
Not used	0.01	0.14	0.01	0.09	--	0.05	--	0.04
Total	0.52	0.56	0.34	0.36	0.18	0.20	0.10	0.15
Fond du Lac								
Industrial fuel	--	0.01	--	0.01	--	--	--	--
Domestic fuel	--	0.06	--	0.06	--	--	--	0.02
Miscellaneous 3/	--	0.03	--	--	--	0.03	--	--
Not used	--	0.01	--	0.01	--	--	--	--
Total	--	0.11	--	0.08	--	0.03	--	0.02
Green								
Domestic fuel	--	0.27	--	0.27	--	--	--	0.12
Miscellaneous 3/	--	0.16	--	--	--	0.16	--	--
Not used	--	--	--	--	--	--	--	--
Total	--	0.43	--	0.27	--	0.16	--	0.12
Green Lake								
Domestic fuel	0.01	--	0.01	--	--	--	--	--
Miscellaneous 3/	--	--	--	--	--	--	--	--
Total	0.01	--	0.01	--	--	--	--	--
Jefferson								
Domestic fuel	--	0.01	--	0.01	--	--	--	--
Miscellaneous 3/	--	0.16	--	0.10	--	0.06	--	0.04
Not used	--	--	--	--	--	--	--	--
Total	--	0.17	--	0.11	--	0.06	--	0.04

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Kewaunee								
Fiber products	0.59	8.09	0.59	8.09	--	--	--	--
Industrial fuel	0.03	0.59	0.03	0.59	--	--	--	0.07
Domestic fuel	0.10	0.63	0.10	0.63	--	--	0.03	0.27
Miscellaneous 3/	0.43	5.43	--	--	0.43	5.43	0.25	3.56
Not used	0.01	0.01	0.01	0.01	--	--	--	0.04
Total	1.16	14.75	0.73	9.32	0.43	5.43	0.28	3.94
Manitowoc								
Fiber products	0.14	6.54	0.14	6.54	--	--	--	--
Industrial fuel	0.02	0.02	0.02	0.01	--	0.01	--	0.01
Domestic fuel	0.64	1.28	0.64	1.28	--	--	0.15	0.17
Miscellaneous 3/	0.51	4.54	--	--	0.51	4.54	0.12	3.09
Not used	0.09	0.10	0.08	0.06	0.01	0.04	0.03	0.02
Total	1.40	12.48	0.88	7.89	0.52	4.59	0.30	3.29
Outagamie								
Fiber products	1.34	13.40	1.34	13.40	--	--	--	--
Charcoal	--	0.08	--	--	--	0.08	--	--
Industrial fuel	0.78	7.85	--	0.05	0.78	7.80	0.29	2.89
Domestic fuel	0.01	0.02	0.01	0.02	--	--	--	--
Miscellaneous 3/	0.01	0.45	--	0.28	0.01	0.17	0.29	2.97
Total	2.14	21.80	1.35	13.75	0.79	8.05	0.58	5.86
Racine								
Domestic fuel	0.01	0.12	0.01	0.12	--	--	--	--
Miscellaneous 3/	--	0.07	--	--	--	0.07	--	--
Not used	--	--	--	--	--	--	--	0.05
Total	0.01	0.19	0.01	0.12	--	0.07	--	0.05
Rock								
Domestic fuel	0.01	0.58	0.01	0.42	--	0.16	--	0.18
Miscellaneous 3/	0.01	0.10	--	--	0.01	0.10	--	--
Not used	0.01	0.09	0.01	0.06	--	0.03	--	0.03
Total	0.03	0.77	0.02	0.48	0.01	0.29	--	0.21
Sheboygan								
Industrial fuel	0.01	1.02	0.01	1.02	--	--	--	--
Domestic fuel	1.87	0.22	1.87	0.22	--	--	--	0.01
Miscellaneous 3/	1.25	0.72	0.10	--	1.15	0.72	1.38	0.44
Not used	0.02	0.04	0.01	0.02	0.01	0.02	0.02	0.10
Total	3.15	2.00	1.99	1.26	1.16	0.74	1.40	0.55
Walworth								
Industrial fuel	--	--	--	--	--	--	--	--
Domestic fuel	--	1.34	--	1.34	--	--	--	0.57
Miscellaneous 3/	--	0.78	--	--	--	0.78	--	--
Not used	--	--	--	--	--	--	--	--
Total	--	2.12	--	1.34	--	0.78	--	0.57

(Table 23 continued on next page)

(Table 23 continued)

County and type of use	Wood residue						Bark	
	Total		Coarse 1/		Fine 2/			
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Washington								
Domestic fuel	--	0.35	--	0.35	--	--	--	0.15
Miscellaneous 3/	--	0.21	--	--	--	0.21	--	--
Total	--	0.56	--	0.35	--	0.21	--	0.15
Waukesha								
Domestic fuel	--	0.14	--	0.14	--	--	--	--
Miscellaneous 3/	--	0.08	--	--	--	0.08	--	0.06
Total	--	0.22	--	0.14	--	0.08	--	0.06
Winnebago								
Domestic fuel	0.14	0.03	0.14	0.03	--	--	--	0.01
Miscellaneous 3/	0.08	0.01	--	--	0.08	0.01	0.01	--
Not used	--	--	--	--	--	--	0.05	--
Total	0.22	0.04	0.14	0.03	0.08	0.01	0.06	0.01
All counties								
Fiber products	2.07	37.27	2.07	37.27	--	--	--	--
Charcoal	--	0.08	--	--	--	0.08	--	--
Industrial fuel	0.85	9.73	0.07	1.82	0.78	7.91	0.29	3.13
Domestic fuel	3.12	8.19	3.12	8.03	--	0.16	0.28	2.48
Miscellaneous 3/	2.47	20.52	0.10	0.38	2.37	20.14	2.05	14.42
Not used	0.14	1.91	0.12	1.46	0.02	0.45	0.10	0.75
Total	8.65	77.70	5.48	48.96	3.17	28.74	2.72	20.78
STATE TOTAL								
Fiber products	104.91	577.97	76.38	487.06	28.53	90.91	0.29	3.48
Charcoal	0.54	13.84	0.54	8.90	--	4.94	0.23	1.90
Industrial fuel	28.78	270.53	13.98	82.26	14.80	188.27	31.96	196.42
Domestic fuel	13.81	109.02	13.72	107.34	0.09	1.68	3.69	17.09
Miscellaneous 3/	18.71	162.18	0.38	8.85	18.33	153.33	8.79	87.63
Not used	10.89	28.07	7.21	18.58	3.68	9.49	4.14	11.28
Total	177.64	1,161.61	112.21	712.99	65.43	448.62	49.10	317.80

1/ Suitable for chipping such as slabs,edgings,veneer cores,etc.
2/ Not suitable for chipping such as sawdust,veneer clippings,etc.
3/ Livestock bedding, mulch, small dimension, and specialty items.

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Smith, W. Brad; Whipple, James W.
1990. **Wisconsin timber industry—an assessment of timber product output and use, 1988.** Resour. Bull. NC-124. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 68 p.

Discusses recent Wisconsin forest industry trends; production and receipts of pulpwood, saw logs, and veneer logs; and production of other timber products in 1988. Reports on logging residue, on wood and bark residue generated at primary wood-using mills, and on disposition of this mill residue.

KEY WORDS: Pulpwood, saw logs, veneer logs, residue.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.